

**1967**  
**CENSUS OF MANUFACTURES**

**VOLUME 1**  
**PART 2**  
**PRELIMINARY REPORTS**

**MAJOR GROUPS 29 - 39,  
AND 19**

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1967 CENSUS OF MANUFACTURES

INDEX OF PRELIMINARY REPORTS, BY REPORT NUMBER AND INDUSTRY CODE

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MC67(P)-3	General Statistics for Industry Groups and Industries - (Recapitulation of preliminary industry reports)
MC67(P)-4	Water Use In Manufacturing: 1968
MC67(P)-5	General Statistics for Geographic Divisions and States - (Recapitulation of preliminary area reports)
MC67(P)-6	(Not Issued)
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Report Number	SIC Code	Industry	Report Number	SIC Code	Industry
MC(P)-			MC(P)-		
20A-1	(2011 Meatpacking plants and (2013 sausages and other prepared meats		20D-1	(2041 Grain mill products and (2045 blended and prepared flour	
2	2015 Poultry dressing plants		2	2042 Prepared feeds for animals and fowls	
20B-1	2021 Creamery butter		3	2043 Cereal preparations	
2	2022 Cheese, natural and processed		4	2044 Rice milling	
3	2023 Condensed and evaporated milk		5	2046 Wet corn milling	
4	2024 Ice cream and frozen desserts		20E-1	2051 Bread, cake, and related products	
5	2026 Fluid milk		2	2052 Cookies and crackers	
20C-1	2031 Canned and cured seafoods		20F-1	2061 Raw cane sugar	
2	2032 Canned specialties		2	2062 Cane sugar refining	
3	2033 Canned fruits and vegetables		3	2063 Beet sugar	
4	2034 Dehydrated food products		4	(2071 Confectionery, chocolate, and (2072 cocoa products	
5	2035 Pickles, sauces, and salad dressings		5	2073 Chewing gum	
6	2036 Fresh or frozen packaged fish				
7	2037 Frozen fruits and vegetables				





Report Number	SIC Code	Industry	Report Number	SIC Code	Industry
MC67(P)-			MC67(P)-		
20G-1	2082	Malt liquors	22D-1	2271	Woven carpets and rugs
2	2083	Malt	2	2272	Tufted carpets and rugs
3	2084	Wines, brandy, and brandy spirits	3	2279	Carpets and rugs, n.e.c.
4	2085	Distilled liquor, except brandy	22E-1	2281	Yarn mills, except wool
5	2086	Bottled and canned soft drinks	2	2282	Throwing and winding mills
6	2087	Flavoring extracts and sirups, n.e.c.	3	2283	Wool yarn mills
			4	2284	Thread mills
20H-1	2091	Cottonseed oil mills	22F-1	2291	Felt goods, n.e.c.
2	2092	Soybean oil mills	2	2292	Lace goods
3	2093	Vegetable oil mills, n.e.c.	3	2293	Paddings and upholstery filling
4	2094	Animal and marine fats and oils	4	2294	Processed textile waste
5	2096	Shortening and cooking oils	5	2295	Coated fabrics, not rubberized
20I-1	2095	Roasted coffee	6	2296	Tire cord and fabric
2	2097	Manufactured ice	7	2297	Scouring and combing plants
3	2098	Macaroni and spaghetti	8	2298	Cordage and twine
4	2099	Food preparations, n.e.c.	9	2299	Textile goods, n.e.c.
21A-1	2111	Cigarettes	23A-1	2311	Men's and boys' suits and coats
2	2121	Cigars	2	2321	Men's and boys' shirts and night- wear
3	2131	Chewing and smoking tobacco	3	2322	Men's and boys' underwear
4	2141	Tobacco stemming and redrying	4	2323	Men's and boys' neckwear
22A-1	2211	Weaving mills, cotton	5	2327	Men's and boys' separate trousers
2	2221	Weaving mills, synthetics	6	2328	Men's and boys' work clothing
3	2231	Weaving and finishing mills, wool	7	2329	Men's and boys' clothing, n.e.c.
4	2241	Narrow fabric mills	23B-1	2331	Women's and misses' blouses and waists
22B-1	2251	Women's hosiery, except socks	2	2335	Women's and misses' dresses
2	2252	Hosiery, n.e.c.	3	2337	Women's and misses' suits and coats
3	2253	Knit outerwear mills	4	2339	Women's and misses' outerwear, n.e.c.
4	2254	Knit underwear mills	23C-1	2341	Women's and children's underwear
5	2256	Knit fabric mills	2	2342	Corsets and allied garments
6	2259	Knitting mills, n.e.c.	3	2351	Millinery
22C-1	2261	Finishing plants, cotton	4	2352	Hats and caps, except millinery
2	2262	Finishing plants, synthetics	5	2361	Children's dresses and blouses
3	2269	Finishing plants, n.e.c.	6	2363	Children's coats and suits
			7	2369	Children's outerwear, n.e.c.





Report Number	SIC Code	Industry	Report Number	SIC Code	Industry
MC67(P)-			MC67(P)-		
23D-1	2371	Fur goods	25B-1	2521	Wood office furniture
2	2381	Fabric dress and work gloves	2	2522	Metal office furniture
3	2384	Robes and dressing gowns	3	2531	Public building furniture
4	2385	Waterproof outer garments	4	2541	Wood partitions and fixtures
5	2386	Leather and sheep lined clothing	5	2542	Metal partitions and fixtures
6	2387	Apparel belts	6	2591	Venetian blinds and shades
7	2389	Apparel and accessories, nec.	7	2599	Furniture and fixtures, n.e.c.
23E-1	2391	Curtains and draperies	26A-1	2611	Pulpmills
2	2392	Housefurnishings, n.e.c.	2	2621	Papermills, except building paper
3	2393	Textile bags	3	2631	Paperboard mills
4	2394	Canvas products	4	2661	Building paper and building board mills
5	2395	Pleating and stitching			
6	2396	Automotive and apparel trimmings	26B-1	2641	Paper coating and glazing
7	2397	Schiffli machine embroideries	2	2642	Envelopes
8	2399	Fabricated textile products, n.e.c.	3	2643	Bags, except textile bags
24A-1	2411	Logging camps and logging contractors	4	2644	Wallpaper
2	2421	Sawmills and planing mills, general	5	2645	Die-cut paper and board
3	2426	Hardwood dimension and flooring	6	2646	Pressed and molded pulp goods
4	2429	Special product sawmills, nec.	7	2647	Sanitary paper products
24B-1	2431	Millwork	8	2649	Converted paper products, n.e.c.
2	2432	Veneer and plywood			
3	2433	Prefabricated wood structures	26C-1	2651	Folding paperboard boxes
24C-1	2441	Nailed wooden boxes and shook	2	2652	Setup paperboard boxes
2	2442	Wirebound boxes and crates	3	2653	Corrugated and solid fiber boxes
3	2443	Veneer and plywood containers	4	2654	Sanitary food containers
4	2445	Cooperage	5	2655	Fiber cans, drums, and related materials
5	2491	Wood preserving	27A-1	2711	Newspapers
6	2499	Wood products, n.e.c.	2	2721	Periodicals
25A-1	2511	Wood household furniture	3	2731	Book publishing
2	2512	Upholstered household furniture	4	2732	Book printing
3	2514	Metal household furniture	5	2741	Miscellaneous publishing
4	2515	Mattresses and bedsprings	27B-1	2751	Commercial printing, except lithographic
5	2519	Household furniture, n.e.c.	2	2752	Commercial printing, lithographic
			3	2753	Engraving and plate printing
			4	2761	Manifold business forms





Report Number	SIC Code	Industry	Report Number	SIC Code	Industry
MC67(P)-			MC67(P)-		
27C-1	2771	Greeting card publishing	29A-1	(2992	Petroleum refining and
2	2782	Blankbooks and looseleaf binders		(2911	lubricating oils and greases
3	2789	Bookbinding and related work	2	2951	Paving mixtures and blocks
4	2791	Typesetting	3	2952	Asphalt felts and coatings
5	2793	Photoengraving	4	2999	Petroleum and coal products, nec
6	2794	Electrotyping and stereotyping	30A-1	3011	Tires and inner tubes
28A-1	2812	Alkalies and chlorine	2	3021	Rubber footwear
2	2813	Industrial gases	3	3031	Reclaimed rubber
3	2815	Cyclic intermediates and crudes	4	3069	Fabricated rubber products, nec
4	2816	Inorganic pigments	5	3079	Miscellaneous plastics products
5	2818	Industrial organic chemicals n.e.c.	31A-1	3111	Leather tanning and finishing
6	2819	Industrial inorganic chemicals, n.e.c.	2	3121	Industrial leather belting and packing
28B-1	2821	Plastics materials and resins	3	3131	Footwear cut stock
2	2822	Synthetic rubber	4	3141	Shoes, except rubber
3	2823	Cellulosic manmade fibers	5	3142	House slippers
4	2824	Organic fibers, noncellulosic	31B-1	3151	Leather gloves and mittens
28C-1	2831	Biological products	2	3161	Luggage
2	2833	Medicinals and botanicals	3	3171	Women's handbags and purses
3	2834	Pharmaceutical preparations	4	3172	Personal leather goods
28D-1	2841	Soap and other detergents	5	3199	Leather goods, n.e.c.
2	2842	Polishes and sanitation goods	32A-1	3211	Flat glass
3	2843	Surface active agents	2	3221	Glass containers
4	2844	Toilet preparations	3	3229	Pressed and blown glass, n.e.c.
28E-1	2851	Paints and allied products	4	3231	Products of purchased glass
2	2861	Gum and wood chemicals	32B-1	3241	Cement, hydraulic
28F-1	2871	Fertilizers	2	3251	Brick and structural clay tile
2	2872	Fertilizers, mixing only	3	3253	Ceramic wall and floor tile
3	2879	Agricultural chemicals, nec	4	3255	Clay refractories
28G-1	2891	Adhesives and gelatin	5	3259	Structural clay products, nec
2	2892	Explosives	32C-1	3261	Vitreous plumbing fixtures
3	2893	Printing ink	2	3262	Vitreous china food utensils
4	2895	Carbon black	3	3263	Fine earthenware food utensils
5	2899	Chemical preparations, nec	4	3264	Porcelain electrical supplies
			5	3269	Pottery products, n.e.c.
			32D-1	3271	Concrete block and brick
			2	3272	Concrete products, nec
			3	3273	Ready-mixed concrete
			4	3274	Lime





Report Number	SIC Code	Industry	Report Number	SIC Code	Industry
MC67(P)-			MC67(P)-		
32D-5	3275	Gypsum products	33E-1	3391	Iron and steel forgings
6	3281	Cut stone and stone products	2	3392	Nonferrous forgings
			3	3399	Primary metal products, nec
32E-1	3291	Abrasive products	34A-1	3411	Metal cans
2	3292	Asbestos products	2	3421	Cutlery
3	3293	Gaskets and insulations	3	3423	Hand and edge tools, n.e.c.
4	3295	Minerals, ground or treated	4	3425	Handsaws and saw blades
5	3296	Mineral wool	5	3429	Hardware, n.e.c.
6	3297	Nonclay refractories			
7	3299	Nonmetallic mineral products, n.e.c.	34B-1	3431	Metal sanitary ware
			2	3432	Plumbing fittings and brass goods
33A-1	3312	Blast furnaces and steel mills	3	3433	Heating equipment, except electric
2	3313	Electrometallurgical products			
3	3315	Steel wire and related products	34C-1	3441	Fabricated structural steel
4	3316	Cold finishing of steel shapes	2	3442	Metal doors, sash, and trim
5	3317	Steel pipe and tubes	3	3443	Fabricated platework (boiler shops)
			4	3444	Sheet metalwork
33B-1	3321	Gray iron foundries	5	3446	Architectural metalwork
2	3322	Malleable iron foundries	6	3449	Miscellaneous metalwork
3	3323	Steel foundries			
33C-1	3331	Primary copper	34D-1	3451	Screw machine products
2	3332	Primary lead	2	3452	Bolts, nuts, rivets, and washers
3	3333	Primary zinc	3	3461	Metal stampings
4	3334	Primary aluminum	4	3471	Plating and polishing
5	3339	Primary nonferrous metals, n.e.c.	5	3479	Metal coating and allied services
6	3341	Secondary nonferrous metals			
33D-1	3351	Copper rolling and drawing	34E-1	3481	Miscellaneous fabricated wire products
2	3352	Aluminum rolling and drawing	2	3491	Metal barrels, drums, and pails
3	3356	Nonferrous rolling and drawing, n.e.c.	3	3492	Safes and vaults
4	3357	Nonferrous wiredrawing and insulating	4	3493	Steel springs
5	3361	Aluminum castings	5	3494	Valves and pipe fittings
6	3362	Brass, bronze, and copper castings	6	3496	Collapsible tubes
			7	3497	Metal foil and leaf
7	3369	Nonferrous castings, n.e.c.	8	3498	Fabricated pipe and fittings
			9	3499	Fabricated metal products, nec
			35A-1	3511	Steam Engines and turbines
			2	3519	Internal combustion engines, nec



Report Number	SIC Code	Industry	Report Number	SIC Code	Industry
MC67(P)-			MC67(P)-		
35A-3	3522	Farm machinery	35G-1	3581	Automatic merchandising machines
			2	3582	Commercial laundry equipment
35B-1	3531	Construction machinery	3	3585	Refrigeration machinery
2	3532	Mining machinery	4	3586	Measuring and dispensing pumps
3	3533	Oilfield machinery	5	3589	Service industry machines, n.e.c.
4	3534	Elevators and moving stairways	6	3599	Miscellaneous machinery, except electrical
5	3535	Conveyors and conveying equipment			
6	3536	Hoists, cranes, and monorails	36A-1	3611	Electric measuring instruments
7	3537	Industrial trucks and tractors	2	3612	Transformers
			3	3613	Switchgear and switchboard apparatus
35C-1	3541	Machine tools, metal-cutting types	4	3621	Motors and generators
2	3542	Machine tools, metal-forming types	5	3622	Industrial controls
3	3544	Special dies, tools, jigs, and fixtures	6	3623	Welding apparatus
4	3545	Machine tool accessories	7	3624	Carbon and graphite products
5	3548	Metalworking machinery, n.e.c.	8	3629	Electrical industrial apparatus, n.e.c.
35D-1	3551	Food products machinery	36B-1	3631	Household cooking equipment
2	3552	Textile machinery	2	3632	Household refrigerators and freezers
3	3553	Woodworking machinery	3	3633	Household laundry equipment
4	3554	Paper industries machinery	4	3634	Electric housewares and fans
5	3555	Printing trades machinery	5	3635	Household vacuum cleaners
6	3559	Special industry machinery, n.e.c.	6	3636	Sewing machines
			7	3639	Household appliances, n.e.c.
35E-1	3561	Pumps and compressors	36C-1	3641	Electric lamps
2	3562	Ball and roller bearings	2	3642	Lighting fixtures
3	3564	Blowers and fans	3	3643	Current carrying wiring devices
4	3565	Industrial patterns	4	3644	Noncurrent carrying wiring devices
5	3566	Power transmission equipment			
6	3567	Industrial furnaces and ovens	36D-1	3651	Radio and TV receiving sets
7	3569	General industry machinery, n. e. c.	2	3652	Phonograph records
			3	3661	Telephone and telegraph apparatus
35F-1	3572	Typewriters	4	3662	Radio and TV communication equipment
2	(3573	Electronic computing equipment	5	3671	Electron tubes, receiving type
	(3574	and Calculating and accounting machines	6	3672	Cathode ray picture tubes
3		Number not used	7	3673	Electron tubes, transmitting
4	3576	Scales and balances			
5	3579	Office machines, n.e.c.			





Report Number	SIC Code	Industry	Report Number	SIC Code	Industry
MC67(P)-			MC67(P)-		
36D-8	3674	Semiconductors	38B-1	3861	Photographic equipment and supplies
9	3679	Electronic components	2	3871	Watches and clocks
36E-1	3691	Storage batteries	3	3872	Watchcases
2	3692	Primary batteries, dry and wet	39A-1	3911	Jewelry, precious metal
3	3693	X-ray apparatus and tubes	2	3912	Jewelers' findings and materials
4	3694	Engine electrical equipment	3	3913	Lapidary work
5	3699	Electrical equipment, n.e.c.	4	3914	Silverware and plated ware
37A-1		Number not used	39B-1	3931	Musical instruments and parts
2		Number not used	2	3941	Games and toys
3	3713	Truck and bus bodies	3	3942	Dolls
4	(3711 and 3712	Motor vehicles	4	3943	Children's vehicles, except bicycles
	(3714	Motor vehicle parts and accessories	5	3949	Sporting and athletic goods, n.e.c.
5	3715	Truck trailers	39C-1	3951	Pens and mechanical pencils
37B-1	3721	Aircraft	2	3952	Lead pencils and art goods
2	3722	Aircraft engines and engine parts	3	3953	Marking devices
3	3729	Aircraft equipment, n.e.c.	4	3955	Carbon paper and inked ribbons
37C-1	3731	Shipbuilding and repairing	5	3961	Costume jewelry
2	3732	Boat building and repairing	6	3962	Artificial flowers
3	3741	Locomotives and parts	7	3963	Buttons
4	3742	Railroad and street cars	8	3964	Needles, pins, and fasteners
5	3751	Motorcycles, bicycles, and parts	39D-1	3991	Brooms and brushes
6	3791	Trailer coaches	2	3993	Signs and advertising displays
7	3799	Transportation equipment, n.e.c.	3	3994	Mortician's goods
38A-1	3811	Engineering and scientific instruments	4	3996	Hard surface floor coverings
2	3821	Mechanical measuring devices	5	3999	Manufactures, n.e.c.
3	3822	Automatic temperature controls	19A-	1925	Complete guided missiles
4	3831	Optical instruments and lenses	2	1929	Ammunition, except for small arms, n.e.c.
5	3841	Surgical and medical instruments	3	1931	Tanks and Tank Components
6	3842	Surgical appliances and supplies	4	1941	Sighting and fire control
7	3843	Dental Equipment and Supplies	5	1951	Small Arms
8	3851	Ophthalmic goods	6	1961	Small arms ammunition
			7	(1911	Guns, howitzers, mortars and related equipment and Ordnance and accessories, n.e.c.
				(1999	



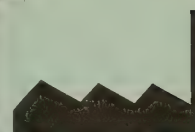








# 1967 CENSUS OF MANUFACTURES



MC67(P)-29A-1

## INDUSTRY SERIES

### Petroleum refining and lubricating oils and greases

SIC Codes 2911 and 2992

**preliminary  
report**

The Petroleum Refining Industry includes establishments primarily engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, and other products from crude petroleum and its fractionation products through straight distillation of crude oil, re-distillation of unfinished petroleum derivatives, cracking or other processes. Establishments primarily engaged in producing natural gasoline

from natural gas are classified in mining industries.

The Lubricating Oils and Greases Industry includes establishments primarily engaged in blending and compounding lubricating oils and greases from purchased mineral, animal and vegetable materials.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)							
INDUSTRY 2911.--PETROLEUM REFINING														
1967 Census....	438	287	106.7	965.1	75.6	151.6	632.2	4,745.3	15,684.2	20,292.6	956.3	1,899.3	98	97
1966 ASM <sup>1</sup> .....	(NA)	(NA)	105.5	897.3	75.5	149.9	597.5	4,099.2	14,640.9	18,758.7	630.7	1,718.3	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	108.7	887.4	78.1	153.8	592.8	3,493.3	14,001.4	17,500.9	565.3	1,680.0	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	113.8	905.9	81.6	162.1	605.0	3,192.2	13,606.3	16,802.4	384.3	1,678.4	(NA)	(NA)
1963 Census....	427	297	118.3	922.3	85.2	166.4	614.3	3,138.2	13,367.3	16,497.5	385.1	1,695.5	98	97
1962 ASM <sup>1</sup> .....	(NA)	(NA)	122.9	906.6	87.8	173.3	603.0	2,965.5	12,979.5	15,914.1	433.3	1,712.1	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	128.7	937.1	92.4	182.2	629.6	2,929.2	12,734.2	15,618.6	459.3	1,652.8	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	134.9	935.8	97.3	192.4	635.2	2,773.4	12,713.4	15,505.1	455.5	1,604.8	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	137.1	944.3	100.1	196.0	645.1	2,458.2	12,621.9	15,090.1	407.7	1,643.0	(NA)	(NA)
1958 Census <sup>2</sup> ...	446	313	146.0	944.3	106.9	207.6	648.3	2,119.4	12,249.4	14,539.1	656.8	1,572.9	98	98
INDUSTRY 2992.--LUBRICATING OILS AND GREASES														
1967 Census....	299	111	7.4	58.2	4.0	7.9	24.5	200.9	285.1	488.0	8.5	53.3	94	32
1966 ASM <sup>1</sup> .....	(NA)	(NA)	8.0	62.4	4.3	8.4	26.5	220.4	309.1	527.4	7.7	57.3	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	7.9	56.8	4.3	8.7	25.4	212.9	285.8	498.9	*7.0	52.8	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	8.6	60.9	4.9	10.1	29.1	197.2	265.8	466.8	*5.3	50.5	(NA)	(NA)
1963 Census....	353	108	8.4	57.9	4.7	9.8	27.0	199.1	273.8	471.2	4.7	52.0	91	33
1962 ASM <sup>1</sup> .....	(NA)	(NA)	*6.8	*45.7	*4.0	*8.8	*21.7	*114.6	*222.6	*336.4	*2.5	*39.5	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	*6.6	*44.0	*3.8	*8.8	*20.4	*107.0	*207.7	*316.3	*10.0	*39.2	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	*7.8	*50.5	*4.8	*10.3	*24.4	*128.4	*221.0	*349.1	*3.3	*42.9	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	7.9	47.9	4.7	10.2	22.8	115.1	215.0	329.0	4.9	*40.4	(NA)	(NA)
1958 Census <sup>2</sup> ...	306	90	7.6	42.3	4.5	8.6	20.4	103.1	177.5	281.4	7.2	36.8	86	35

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available. Revised.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added for industry 2911 were 1 and 1 and for industry 2992 were 2 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued November 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary

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**BUREAU OF THE CENSUS** George Hay Brown, Director



The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Petroleum Refining Industry amounted to \$20,292.6 million, an increase of 23 percent compared with 1963. Value added by manufacture at \$4,745.3 million in 1967 was 51 percent more than value added in 1963. Average employment in the industry showed a decrease of 10 percent from 1963 to a total of 106.7 thousand employees in 1967. The value of products shipped and miscellaneous receipts of establishments classified in the Lubricating Oils and Greases Industry amounted to \$488.0 million in 1967 for an increase of 4 percent compared with 1963. Value added by manufacture at \$200.9 million in 1967 was 1 percent more than value added in 1963. Average employment in the industry showed a decrease of 12 percent from 1963 to a total of 7.4 thousand employees in 1967.

Of the \$20,292.6 million total value of shipments and other receipts of establishments classified as petroleum refining, \$347.1 million were products primary to other industries; and \$763.0 million were receipts for miscellaneous activities. The industry shipments of primary products represented 98 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 98 percent in 1963.

Of the \$488.0 million total value of shipments and other receipts of establishments classified as lubricating oils and greases, \$24.8 million were products primary to other industries; and \$37.5 million were receipts for miscellaneous activities. The industry shipments of primary products represented 94 percent of the total manufactured product shipments, primary and secondary. This percent, was 91 percent in 1963.

The total value of petroleum products shipped by all producers in 1967 was \$19,852.6 million of which \$19,182.5 million, or 97 percent, were shipped by plants classified in industry 2911, Petroleum Refining, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 97 percent in 1963. Similarly the value of lubricating oils and greases shipped by all producers in 1967 was \$1,326.8 million of which \$425.7 million, or 32 percent, were shipped by plants classified in industry 2992, Lubricating Oils and Greases, while the remainder was shipped by plants classified in other industries. This percent was 33 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967										1963		
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 2911.--PETROLEUM REFINING												
United States, total.....	438	287	106.7	965.1	75.6	151.6	632.2	4,745.3	15,684.2	20,292.6	956.3	118.3	3,138.6
Northeast.....	59	30	14.7	131.6	11.0	21.8	90.2	439.3	2,128.6	2,552.7	85.7	18.5	366.3
Pennsylvania.....	24	17	9.9	85.9	7.5	14.9	60.0	256.5	1,021.1	1,268.6	51.9	11.4	165.4
East North Central....	66	45	18.2	169.6	12.3	24.8	106.1	752.3	2,509.6	3,267.7	132.6	19.4	498.1
Ohio.....	16	12	3.3	30.8	2.4	4.7	21.4	160.5	701.7	863.3	(D)	3.6	103.8
Illinois.....	20	12	6.5	59.3	4.5	8.7	37.7	295.2	932.3	1,232.2	(D)	7.0	179.3
West North Central....	29	22	5.2	45.7	3.7	7.5	29.2	262.4	777.9	1,033.5	21.6	5.5	164.6
South.....	178	126	49.1	445.3	35.1	70.7	295.1	2,500.0	7,725.0	10,137.8	487.7	53.3	1,509.0
West South Central..	140	102	45.6	414.9	32.7	65.5	276.2	2,264.2	6,936.6	9,119.1	(D)	49.9	1,365.1
Louisiana.....	24	22	9.0	87.4	5.7	12.2	53.7	325.9	1,580.7	1,894.4	118.2	10.0	258.5
Texas.....	84	58	31.0	283.0	22.4	44.0	188.4	1,766.1	4,628.1	6,326.4	291.6	33.7	976.4
Mountain.....	39	26	4.2	34.3	2.8	5.8	22.3	156.1	473.0	633.8	20.5	4.9	111.2
Utah.....	4	4	0.9	6.9	0.6	1.2	4.7	49.5	126.1	174.1	(D)	0.9	24.2
Pacific.....	67	38	15.3	138.5	10.6	21.1	89.3	635.1	2,070.0	2,667.2	208.3	17.7	488.2
California.....	51	31	14.0	126.7	9.8	19.4	82.3	496.9	1,750.2	2,211.3	205.2	15.3	417.7
	INDUSTRY 2992.--LUBRICATING OILS AND GREASES												
United States, total.....	299	111	7.4	58.2	4.0	7.9	24.5	200.9	285.1	488.0	8.5	8.4	199.1
Massachusetts.....	8	2	0.1	0.8	0.1	0.1	0.4	1.9	6.2	8.1	(D)	(D)	(D)
Middle Atlantic.....	73	34	2.3	19.5	1.2	2.4	8.0	56.1	91.7	149.2	(D)	3.0	61.5
North Central.....	125	52	3.3	26.2	1.6	3.2	10.1	102.7	116.9	220.5	(D)	3.7	100.7
Michigan.....	21	7	0.3	2.2	0.1	0.3	0.8	8.6	10.0	18.5	(D)	(D)	(D)
Wisconsin.....	11	6	0.2	1.7	0.1	0.2	0.6	5.8	6.1	12.3	0.1	0.2	5.8
South Atlantic.....	13	6	0.3	1.8	0.2	0.3	0.8	5.1	14.7	19.7	0.2	(D)	(D)
Texas.....	18	2	0.2	1.1	0.1	0.2	0.5	1.5	5.2	6.8	(D)	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

<sup>r</sup>Revised.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	1967				1963			
			Receipts <sup>1</sup>	Total shipments including interplant transfers		Net shipments <sup>2</sup>	Receipts <sup>1</sup>	Total shipments including interplant transfers		Net shipments <sup>2</sup>
				Quantity	Value (excluding tax) (million dollars)			Quantity	Value (excluding tax) (million dollars)	
			(quantity)				(quantity)			
2911 --	PETROLEUM PRODUCTS, TOTAL.....		(X)	(X)	19,852.6	(X)	(X)	(X)	15,983.9	(X)
2992 --										
29111 --	Gasoline, total.....		(NA)	1,880.1	10,006.9	(NA)	(NA)	1,639.2	7,978.1	(NA)
29111 11	Aviation gasoline, except jet fuel.....	Mil. bbls..	(S)	47.6	441.6	(S)	(NA)	94.6	510.0	(NA)
29111 31	Motor gasoline.....	Mil. bbls..	22.2	1,832.5	9,565.3	1,810.3	16.0	1,488.9	7,225.6	1,472.9
29111 98	Other finished gasolines, including finished base <sup>3</sup> .....	...do.....	(X)	(X)	( <sup>4</sup> )	(X)	34.5	55.7	242.5	21.2
29112 --	Jet fuel, total.....	...do.....	2.8	273.1	1,091.5	270.3	(NA)	166.2	632.5	(NA)
29112 11	Naphtha type.....	...do.....	0.1	104.9	429.0	104.8	(NA)	91.2	351.0	(NA)
29112 13	Kerosene type.....	...do.....	2.7	168.2	662.5	165.5	(NA)	75.0	281.5	(NA)
29113 --	Kerosene:									
29113 11	Kerosene, except jet fuel.....	...do.....	5.1	102.0	430.5	96.9	(NA)	94.6	374.7	(NA)
29114 --	Distillate fuel oil:									
29114 11	Distillate fuel oil (including grades No. 1, 2, 4, light diesel-type, light gas enrichment oils, etc.).....	...do.....	19.8	880.2	3,305.7	860.4	12.7	799.0	2,896.3	786.3
29115 --	Residual fuel oil:									
29115 11	Residual fuel oil (including grades No. 5, 6, heavy diesel-type, heavy gas enrichment oils, etc.).....	...do.....	25.6	276.8	565.3	251.2	22.3	286.3	621.8	263.9
29116 --	Liquefied refinery gases (feed stock and other uses), total.....		(S)	(S)	1,152.6	(S)	(NA)	195.1	702.9	(NA)
	Chemical raw material, including synthetic rubber components <sup>5</sup> .....									
29116 11	Liquefied refinery gases.....	Mil. bbls..	(S)	(S)	629.3	(S)	}	(NA)	195.1	702.9
29116 31	Other aliphatics, including feedstock mixtures.....	...do.....	(S)	(S)	375.0	(S)				
	Other uses:									
29116 51	Liquefied refinery gases.....	...do.....	(S)	(S)	119.1	(S)	}	(NA)	195.1	702.9
29116 71	Other aliphatics.....	...do.....	(S)	(S)	29.2	(S)				
29118 --	Unfinished oils and lubricating oil base stock, total <sup>6</sup> .....		126.2	141.9	613.2	15.7	}	106.6	126.1	526.2
29118 13	Unfinished oils <sup>7</sup> .....	...do.....	109.6	104.0	324.1	5.6				
29118 15	Naphtha and other oils for use as petrochemical feedstocks.....	...do.....	6.0	13.3	83.5	7.3				
29118 51	Lubricating oil petroleum base stocks (for blending, compounding, and grease manufacture) <sup>8</sup> .....	...do.....	10.6	24.6	205.6	14.0	11.7	25.0	202.5	13.3
29119 --	Asphalt, total.....	...do.....	4.6	137.9	422.2	133.3	(D)	108.8	360.5	(D)
29119 11	200 penetration and over, including emulsified asphalt produced at the refinery <sup>9</sup> ....	...do.....	0.2	43.0	133.1	42.8	(D)	33.3	112.1	(D)
29119 51	Less than 200 penetration <sup>10</sup> .....	...do.....	4.4	94.9	289.1	90.5	(D)	1175.5	248.4	(D)
29110 --	Other finished petroleum products, including waxes, total.....		(X)	(X)	12944.1	(X)	(X)	(X)	12680.7	(X)
29110 11	Petrolatum.....	...do.....	0.4	3.6	44.4	3.2	0.5	2.1	26.6	1.6
29110 21	Petroleum coke.....	1,000 short tons.....	(S)	(S)	85.6	(S)	(S)	4,873	52.0	(S)
29110 31	Road oil <sup>13</sup> .....	Mil. bbls..	(D)	6.8	23.5	(D)	(D)	9.3	27.8	(D)
29110 41	Still gas.....	Mil. cu.ft.	(S)	(S)	7.0	(S)	(D)	21,751	7.8	(D)
29110 51	Special naphthas <sup>14</sup> .....	Mil. bbls..	0.7	15.4	87.5	14.7	1.8	20.8	124.9	19.0
29110 55	Aromatics (benzene, toluene, xylenes, etc.) <sup>5</sup> .....	...do.....	(S)	82.4	462.9	(S)	(X)	33.5	254.1	(X)
29110 61	Wax:									
29110 71	Microcrystalline <sup>15</sup> .....	...do.....	0.2	1.5	30.5	1.3	}	1.5	31.9	6.6
29110 81	Crystalline, fully refined.....	...do.....	0.1	3.2	44.8	3.1				
29110 81	Crystalline, other.....	...do.....	-	1.4	20.8	1.4				
29110 98	Other finished petroleum products.....	...do.....	(S)	(S)	94.4	(S)	(S)	(S)	83.9	(S)

See footnotes at end of table.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	1967				1963			
			Receipts <sup>1</sup>	Total shipments including interplant transfers		Net shipments <sup>2</sup>	Receipts <sup>1</sup>	Total shipments including interplant transfers		Net shipments <sup>2</sup>
				Quantity	Value (excluding tax) (million dollars)			Quantity	Value (excluding tax) (million dollars)	
			(quantity)				(quantity)			
2911- -- 2992- --	{ PETROLEUM PRODUCTS--Continued									
29110 00	Products of petroleum refining, n.s.k. (For companies with 10 or more employees. See Note.).....	Mil. bbls..	(X)	(X)	12 37.8	(X)	(X)	(X)	12 12.8	(X)
29110 02	Products of petroleum refining, n.s.k. (For companies with less than 10 employees. See Note.).....	...do.....	(X)	(X)	12 4.9	(X)				
29117 -- 29927 --	Lubricating oils and greases, total.....	...do.....	(X)	(X)	1,303.7	(X)	(X)	(X)	1,206.0	(X)
	Lubricants and similar oils <sup>16</sup> .....	...do.....	3.6	64.6	1,183.3	61.0	(S)	67.6	1,077.3	(S)
29117 21	Made in petroleum refineries.....	...do.....	1.6	51.7	829.5	50.1	2.4	53.4	728.7	51.0
29920 21	Made in lubricating oils and greases industry.....	...do.....	2.0	12.9	353.8	10.9	(S)	14.2	348.6	(S)
	Made in other manufacturing industries... Lubricating greases <sup>17</sup> .....	...do.....								
29117 31	Made in petroleum refineries.....	...do.....	0.1	3.5	120.4	3.4	(S)	5.6	128.6	(S)
	Made in lubricating oils and greases industry.....	...do.....	-	2.1	54.1	2.1	(S)	(S)	55.8	(S)
29920 31	Made in other manufacturing industries... Lubricating oils and greases, n.s.k. (For companies with 10 or more employees. See Note.).....	...do.....	0.1	1.4	66.3	1.3	(S)	(S)	72.8	(S)
	Lubricating oils and greases, n.s.k. (For companies with less than 10 employees. See Note.).....	...do.....								
29920 02	Lubricating oils and greases, n.s.k. (For companies with less than 10 employees. See Note.).....	...do.....	(X)	(X)	16.9	(X)	(X)	(X)	4.2	(X)
			(X)	(X)	6.2	(X)				

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

- Represents zero. (D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or from related figures. (NA) Not available. n.s.k. Not specified by kind. (S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review. <sup>1</sup>Revised. (X) Not applicable.

<sup>1</sup>Reporting companies were requested to classify items in the same manner as billed by the shipper regardless of how the refinery (or blending and compounding establishments) would otherwise classify them.

<sup>2</sup>Represents the difference between "Total shipments" (Quantity) and "Receipts" (Quantity).  
<sup>3</sup>Includes all finished gasolines (other than aviation and automotive gasoline), finished base stocks, and blending agents such as alkylate, polymers (dimer, codimer, etc.), hydrocarbons (hydrodimer, hydrocodimer, etc.) cumene, isopentane, isohexane, neohexane, isoheptane, iso-octane, motor benzol (benzene), and other blending agents derived from petroleum (excludes natural gasoline).  
<sup>4</sup>Code 2911198 included with code 2911131 for 1967.

<sup>5</sup>Detailed product statistics for liquefied gases used as chemical raw material are published by the United States Tariff Commission in the report "Synthetic Organic Chemicals, United States Production and Sales."

<sup>6</sup>Although respondents were requested to report receipts in the same manner as billed by the shipper, the figures indicate that items billed as other oils by the shipper were sometimes reported as receipts of "unfinished oils" or "lubricating oil base stock" for the refinery receiving these oils.

<sup>7</sup>Includes such products as cracking stock, unfinished gasoline, requiring further distillation, naphtha stocks, soaps, wax distillate, and other unfinished petroleum oils. Excludes lubricating oil base stocks, natural gasoline and cycle condensates.

<sup>8</sup>Includes light, medium, neutral, heavy neutral, and residual stocks.

<sup>9</sup>Includes flux for paving, roofing, waterproofing, mastic, and other purposes; cut-back asphalt, emulsified asphalt and fluxes made in petroleum refineries, and other liquid asphaltic products except road oil and fuel oil used for heating purposes.

<sup>10</sup>Includes asphalt for paving, roofing, waterproofing, briquetting, mastic, pipe coating, molding composition, and other heavy asphalt products.

<sup>11</sup>1963 figure, which was previously published in quantities of thousand of tons has been converted to thousand barrels on the basis of 5.5 barrels to the ton.

<sup>12</sup>Product codes 2911000 and 2911002 included in figure for code 29110.

<sup>13</sup>Represents residual asphaltic oil used for surface treatment of road and highways.

<sup>14</sup>Includes petroleum ether, rubber solvent, mineral spirits (petroleum spirits), varnish makers' and painters' naphtha, high-solency naphtha, benzol diluent, lacquer diluent, cleaners' naphtha, stoddard solvent, extraction solvents, and other petroleum distillates shipped as solvents.

<sup>15</sup>Represents amorphous paraffin of melting point not under 145°.

<sup>16</sup>Includes oils for lubricating purposes and such nonlubrication purposes as transformer oil, hydraulic oil, processing oil, quenching oil, and liquid rust preventative.

<sup>17</sup>Includes greases for aviation, automotive, industrial, and railroad uses; launching grease, and cutting, drawing, and grinding compounds and paste. Also includes past rust-preventative compounds and thread compounds.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
INDUSTRY 2911.--PETROLEUM REFINING						
	Materials, containers, and supplies, total.....		(X)	14,540.9	(X)	12,384.0
	Crude petroleum, including field condensate.....	Million bbls.....	3,620.9	11,244.2	3,156.4	9,743.6
131201	Domestic.....	..do.....	3,222.1	10,040.5	2,742.9	8,487.3
131202	Foreign.....	..do.....	398.8	1,203.7	413.5	1,256.4
291181	Foreign unfinished oils (received from foreign countries for further processing).....	..do.....	30.8	100.4	(X)	(NA)
131321	Plant condensate.....	..do.....	30.0	94.2	17.7	57.5
131322	Natural gasoline, mixed and crude, including drip gasoline.....	..do.....	90.4	289.5	104.5	297.8
132123	Liquefied petroleum gases, including feedstocks <sup>1</sup> .....	..do.....	177.0	463.8	134.4	341.7
291107	Benzol (benzene) (100% C <sub>6</sub> H <sub>6</sub> ).....	..do.....	1.6	14.3	2.7	24.7
	Additives, except animal and vegetable oil:					
280011	Antioxidants, antiknock compounds, and inhibitors.....	1,000 bbls.....	2,650	412.5	2,531	284.0
280012	Other additives, including soaps and detergents.....	..do.....	2,000	100.4	1,904	99.1
209001	Animal and vegetable oils.....	..do.....	121	5.4	100	6.1
281980	Chemical catalytic preparations.....	..do.....	(X)	98.9	(X)	71.4
941121	Crankcase drainings and other used oils consumed for refining or reclaiming.....	1,000 bbls.....	2,430	5.6	3,158	8.8
281238	Sodium hydroxide (100% NaOH) (caustic soda).....	1,000 short tons..	278.0	14.4	243.6	14.3
281931	Sulfuric acid (100% H <sub>2</sub> SO <sub>4</sub> ) (except spent).....	..do.....	1,919.6	40.0	1,667.3	33.3
	Containers:					
340001	Metal.....	..do.....	(X)	62.1	(X)	80.9
260091	Paper and paperboard containers and shipping sacks, including corrugated boxes.....	..do.....	(X)	13.1	(X)	12.3
265522	Cans, bodies with combinations of fiber and other materials (foil, plastic, etc.) with metal ends.....	..do.....	(X)	37.4	(X)	23.8
970089	Cost of materials received from petroleum refineries and lube manufacturers (represents cost of materials for which quantities are shown in the "Receipts" column of table 3A).....	..do.....	(X)	944.0	(X)	806.9
970099	All other materials, components, parts, containers, and supplies consumed.....	..do.....	(X)	515.9	(X)	464.1
973000	Materials, containers, and supplies, n.s.k.....	..do.....	(X)	84.8	(X)	13.5
INDUSTRY 2992.--LUBRICATING OILS AND GREASES						
	Materials, containers, and supplies, total.....		(X)	257.6	(X)	250.5
	Additives (except animal and vegetable oil):					
280011	Antioxidants, antiknock compounds, and inhibitors.....	1,000 bbls.....	240	6.7	60	2.6
280012	Other additives, including soaps and detergents.....	..do.....	382	21.5	269	19.4
209001	Animal and vegetable oils.....	..do.....	496	11.2	225	5.8
941121	Crankcase drainings and other used oils consumed for refining or reclaiming.....	..do.....	(X)	(Z)	242	0.4
281238	Sodium hydroxide, (100% NaOH) (caustic soda).....	1,000 short tons..	(X)	(Z)	4.6	0.3
	Containers:					
340001	Metal.....	..do.....	(X)	22.6	(X)	29.9
260091	Paper and paperboard containers and shipping sacks, including corrugated boxes.....	..do.....	(X)	2.6	(X)	2.4
265522	Cans, bodies with combinations of fiber and other materials (foil, plastic, etc.) with metal ends.....	..do.....	(X)	13.7	(X)	9.3
970089	Cost of materials received from petroleum refineries and lube manufacturers (represents cost of materials for which quantities are shown in the "Receipts" column of table 3A).....	..do.....	(X)	119.0	(X)	110.1
970099	All other materials, containers, components, parts and supplies consumed.....	..do.....	(X)	22.0	(X)	47.5
973000	Materials, containers and supplies, n.s.k. <sup>2</sup> .....	..do.....	(X)	38.3	(X)	23.0

(NA) Not available. (X) Not applicable. (Z) Less than 0.1 when rounded.

<sup>1</sup>Represents liquefied petroleum gases from natural gasoline plants only.<sup>2</sup>n.s.k. Not specified by kind.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. These small establishments accounted for approximately 0 percent of payrolls and 0 percent in industry 2911, and 2 percent of payrolls and 1 percent in industry 2992 of value added by manufactures. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

**Textile mill products • Apparel and leather • Chemicals, rubber, and plastics • Machinery and equipment • Primary metals • Intermediate metal products • Processed foods • Lumber, furniture, and paper products • Stone, clay, and glass products.**

A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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OFFICIAL BUSINESS



# 1967 CENSUS OF MANUFACTURES



MC67(P)-29A-2

## INDUSTRY SERIES

### Paving mixtures and blocks

SIC Code 2951

**preliminary  
report**

The Paving Mixtures and Blocks Industry includes establishments primarily engaged in manufacturing asphalt and tar paving mixtures; and paving blocks made of asphalt, creosoted wood, and various compositions of asphalt or tar with other materials. Establishments primarily engaged in manufacturing brick, concrete, granite, and stone paving blocks are classified in major group 32.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classi-

fied in the Asphalt Mixtures and Blocks Industry amounted to \$593.3 million, an increase of 39 percent compared with 1963. Value added by manufacture at \$240.7 million in 1967 was 45 percent more than value added in 1963. Average employment in the industry showed an increase of 28 percent from 1963 to a total of 12.4 thousand employees in 1967.

Of the \$593.3 million total value of shipments and other receipts of establishments classified as asphalt mixtures and blocks, \$39.2 million were products primary to other industries; and \$40.7 million were receipts for miscellaneous activities. The industry shipments of primary products represented 93 percent of the total manufactured product shipments, primary and

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 2951.-PAVING MIXTURES AND BLOCKS														
1967 Census....	877	156	12.4	91.5	8.7	18.3	59.6	240.7	352.9	593.3	25.4	19.8	93	96
1966 ASM <sup>1</sup> .....	(NA)	(NA)	10.4	70.5	7.7	14.9	46.9	185.9	293.6	479.2	20.1	14.5	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	10.1	67.5	7.4	15.9	44.7	183.6	279.6	461.9	19.9	14.7	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	9.9	64.2	6.8	15.1	41.3	160.7	283.8	442.6	13.5	13.4	(NA)	(NA)
1963 Census.....	762	127	9.7	62.1	6.7	15.1	40.0	165.6	261.8	427.5	15.1	12.1	92	89
1962 ASM <sup>1</sup> .....	(NA)	(NA)	*8.3	*52.2	*6.2	*14.0	*34.9	*145.0	*199.2	*344.8	*17.1	*7.3	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	*8.2	*49.8	*6.2	*13.8	*34.6	*124.7	*187.1	*314.9	*13.2	*6.3	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	*7.9	*46.5	*6.0	*13.1	*32.3	*131.4	*172.5	*304.0	*11.7	*5.8	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	*8.1	*44.4	*6.0	*12.1	*28.5	*112.9	*151.0	*265.7	*10.7	*4.9	(NA)	(NA)
1958 Census <sup>2</sup> ...	563	89	7.8	42.0	5.8	11.7	28.1	112.5	154.9	267.7	9.9	9.1	94	85

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 2, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** **Maurice H. Stans, Secretary**  
**Rocco C. Siciliano, Under Secretary**  
**BUREAU OF THE CENSUS**

secondary. This percent, called the specialization ratio for the industry, was 92 percent in 1963.

The total value of paving mixtures and blocks shipped by all producers in 1967 was \$536.0 million of which \$513.4 million, or 96 percent, were shipped by plants classified in industry 2951, Paving Mixtures and Blocks, while the remainder was shipped by plants classified in

other industries. This percent, called the coverage ratio, was 89 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 2951.—PAVING MIXTURES AND BLOCKS													
United States, total.....	877	156	12.4	91.5	8.7	18.3	59.6	240.7	352.9	593.3	25.4	9.7	165.6
New England.....	67	12	1.1	8.4	0.8	1.5	5.4	25.7	29.9	55.4	4.6	0.9	15.2
Middle Atlantic.....	221	32	2.7	22.0	1.9	4.2	13.9	58.9	91.6	150.6	6.7	2.1	39.5
New York.....	109	13	1.1	9.2	0.8	1.8	6.4	27.5	40.7	68.1	(D)	1.0	21.1
New Jersey.....	33	7	0.6	4.8	0.4	0.8	2.7	14.5	21.5	36.0	(D)	0.4	10.0
Pennsylvania.....	79	12	1.0	8.0	0.7	1.5	4.8	16.9	29.3	46.5	3.0	0.6	8.3
East North Central....	188	36	3.0	22.5	1.9	4.2	14.4	53.1	82.1	135.3	5.9	2.1	36.6
Illinois.....	24	6	0.6	5.2	0.4	0.8	2.8	11.1	19.3	30.2	(D)	0.5	7.8
Wisconsin.....	15	1	0.1	0.7	0.1	0.2	0.5	1.4	1.6	3.1	0.2	(D)	(D)
West North Central....	32	6	0.4	3.2	0.3	0.6	2.2	6.1	7.8	13.8	0.3	0.4	7.3
Minnesota.....	10	2	0.1	0.9	0.1	0.2	0.6	1.8	3.2	4.9	(D)	(D)	(D)
Iowa.....	7	1	0.1	0.7	0.1	0.2	0.5	0.7	1.6	2.3	(D)	(D)	(D)
Missouri.....	6	3	0.1	1.2	0.1	0.2	0.9	2.9	1.9	4.8	0.1	0.1	3.3
South Atlantic.....	134	19	1.9	11.9	1.5	3.2	8.8	32.1	49.6	82.3	2.0	1.7	20.9
Maryland.....	20	3	0.7	5.0	0.6	1.4	3.9	13.0	17.5	30.5	(D)	0.6	8.0
Virginia.....	20	1	0.2	1.2	0.2	0.4	1.0	3.7	4.8	8.6	0.4	(D)	(D)
South Carolina.....	8	2	0.1	0.5	0.1	0.1	0.3	1.3	2.0	3.3	0.1	(D)	(D)
Georgia.....	17	2	0.2	0.9	0.1	0.2	0.6	1.6	6.4	8.4	0.1	(D)	(D)
Florida.....	27	7	0.4	2.3	0.3	0.6	1.5	4.9	8.7	13.7	0.4	0.5	5.2
East South Central....	60	11	0.7	4.4	0.5	0.9	2.5	14.1	22.1	35.9	1.2	0.5	9.5
Alabama.....	15	3	0.2	1.1	0.1	0.3	0.7	4.7	5.1	10.0	0.2	0.2	5.0
West South Central....	48	13	0.9	5.0	0.8	1.7	4.1	13.6	20.9	34.4	1.1	0.5	5.3
Arkansas.....	7	1	0.1	0.4	0.1	0.2	0.4	1.6	2.4	4.0	0.2	(D)	(D)
Louisiana.....	10	4	0.2	0.8	0.1	0.3	0.7	2.1	3.4	5.5	(D)	0.1	1.4
Oklahoma.....	9	1	0.1	0.3	0.1	0.1	0.3	1.0	2.6	3.5	(D)	(D)	(D)
Texas.....	22	7	0.6	3.4	0.5	1.2	2.8	9.0	12.5	21.4	0.5	0.3	2.5
Mountain.....	22	10	0.4	3.6	0.3	0.5	1.8	6.7	9.0	15.7	(D)	0.3	3.6
Pacific.....	105	17	1.2	10.6	0.7	1.4	6.6	30.5	40.0	70.0	(D)	1.3	27.7
California.....	88	8	0.8	7.0	0.5	1.0	4.7	22.3	31.5	53.5	2.4	1.0	23.8

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
2951- --	PAVING MIXTURES AND BLOCKS, TOTAL.....		(X)	536.0	(X)	402.9
29510 --	Paving mixtures and blocks:					
	Liquid asphalt and tar paving materials:					
29510 11	Emulsified asphalt, including liquid additives <sup>1</sup> .....	Million bbls..	16.3	71.2	12.1	48.6
29510 15	Other liquid asphalt and tar paving materials, including cut-backs.....	do.....	5.7	22.9	7.7	33.5
29510 51	Asphalt and tar paving mixtures and blocks, including bituminous or asphaltic concrete, and asphaltic paving cements..		(X)	365.0	(X)	294.2
29510 98	Other paving mixtures and blocks, except brick, concrete, or stone.....		(X)	9.4	(X)	8.8
29510 00	Paving mixtures and blocks, n.s.k. (For companies with 10 or more employees. See Note.).....		(X)	53.4	(X)	17.7
29510 02	Paving mixtures and blocks, n.s.k. (For companies with less than 10 employees. See Note.).....		(X)	14.1	(X)	17.7

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Excludes data for quantities produced in petroleum refineries, which are included in the statistics for code 2911911, asphalt of 200 penetration and over, in industry 2911, Petroleum Refining.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 2951.--PAVING MIXTURES AND BLOCKS					
	Materials, containers, and supplies, total.....		(X)	304.5	(X)	223.5
	Asphalt:					
291191	Less than 200 penetration.....	1,000 short tons..	4,760.0	104.5	4,007.0	86.0
291195	200 and over penetration.....	Million bbls.....	(S)	11.0	3.3	9.6
144201	Sand and gravel.....	1,000 short tons..	35,387.8	59.9	(NA)	(NA)
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	63.0	(X)	89.9
973000	Materials, containers, and supplies, n.s.k. <sup>1</sup> .....		(X)	66.1	(X)	38.0

(NA) Not available. n.s.k. Not specified by kind. (S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review. (X) Not applicable.

<sup>1</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 2951, these small establishments accounted for approximately 3 percent of payrolls and 3 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.

# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

**Textile mill products • Apparel and leather • Chemicals, rubber, and plastics • Machinery and equipment • Primary metals • Intermediate metal products • Processed foods • Lumber, furniture, and paper products • Stone, clay, and glass products.**

A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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**U. S. DEPARTMENT OF COMMERCE  
Bureau of the Census**



**U.S. DEPARTMENT OF COMMERCE**

**BUREAU OF THE CENSUS**

**WASHINGTON, D.C. 20233**

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# 1967 CENSUS OF MANUFACTURES



MC67(P)-29A-3

## INDUSTRY SERIES

**preliminary  
report**

### Asphalt felts and coatings

SIC Code 2952

The Asphalt Felts and Coatings Industry includes establishments primarily engaged in manufacturing asphalt and other saturated roofing felts in roll or shingle form, either smooth or faced with grit, and in manufacturing roofing cements and coatings. Establishments primarily engaged in manufacturing paint are classified in industry 2851.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Asphalt Felts and Coatings Industry amounted to \$588.2 million, an increase of 11

percent compared with 1963. Value added by manufacture at \$217.9 million in 1967 was 15 percent more than value added in 1963. Average employment in the industry showed a decrease of 3 percent from 1963 to a total of 14.1 thousand employees in 1967.

Of the \$588.2 million total value of shipments and other receipts of establishments classified as asphalt felts and coatings, \$80.2 million were products primary to other industries; and \$15.0 million were receipts for miscellaneous activities. The industry shipments of primary products represented 86 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 90 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

(see appendix, Explanation of Terms)

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 2952.-ASPHALT FELTS AND COATINGS														
1967 Census....	225	137	14.1	94.5	10.2	22.5	64.7	217.9	367.6	588.2	8.8	41.3	86	94
1966 ASM <sup>1</sup> .....	(NA)	(NA)	14.7	91.3	10.7	23.0	65.8	226.3	366.1	589.4	9.6	48.5	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	14.7	89.2	11.0	23.5	65.3	219.0	364.3	585.0	10.9	42.6	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	14.6	87.1	10.9	23.8	61.3	207.2	364.7	573.4	8.7	44.3	(NA)	(NA)
1963 Census.....	230	140	14.6	82.5	10.9	23.0	57.3	190.0	339.0	527.6	7.0	43.0	90	92
1962 ASM <sup>1</sup> .....	(NA)	(NA)	*13.3	*78.5	*9.5	*20.4	*54.5	*180.1	*313.8	*494.1	*21.8	*39.3	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	*13.1	*74.0	*9.4	*19.6	*51.1	*184.0	*296.3	*474.9	*7.8	*39.4	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	*17.3	*97.9	*13.6	*27.9	*70.4	*242.8	*310.6	*555.6	*13.1	*35.5	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	*15.2	*80.4	*11.4	*24.3	*56.9	*178.8	*317.0	*495.3	*6.8	*38.4	(NA)	(NA)
1958 Census <sup>2</sup> ...	209	128	15.5	77.4	11.5	24.0	54.0	156.5	304.4	460.1	6.6	37.4	90	92

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 3 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued September 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary  
Rocco C. Siciliano, Under Secretary  
**BUREAU OF THE CENSUS**

The total value of asphalt felts and coatings shipped by all producers in 1967 was \$524.6 million of which \$493.0 million, or 94 percent, were shipped by plants classified in industry 2952, Asphalt Felts and Coatings, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 92 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 2952, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

#### M29A, Asphalt and Tar Roofing and Siding Products

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 2952.-ASPHALT FELTS AND COATINGS												
United States, total.....	225	137	14.1	94.5	10.2	22.5	64.7	217.9	367.6	588.2	8.8	14.6	190.0
New England.....	10	6	0.6	3.8	0.4	1.0	2.8	8.6	15.4	24.0	0.3	0.6	7.1
Middle Atlantic.....	34	21	2.0	14.8	1.5	3.3	10.6	33.1	63.7	96.6	1.6	2.2	29.0
Pennsylvania.....	14	7	0.7	5.1	0.6	1.2	3.8	13.1	23.4	36.6	0.4	0.7	8.8
East North Central....	49	32	4.5	32.2	3.5	7.7	23.5	72.4	107.1	180.7	2.3	4.4	61.4
Illinois.....	24	19	2.7	19.2	2.0	4.5	13.8	42.4	73.4	116.7	(D)	2.6	33.6
West North Central....	15	9	0.9	5.9	0.7	1.5	4.1	12.9	25.0	38.4	0.8	0.9	10.5
Minnesota.....	5	4	0.4	2.6	0.3	0.7	1.6	5.5	10.9	16.4	(D)	(D)	(D)
South.....	75	49	4.7	27.6	3.0	6.6	16.8	72.3	109.2	181.4	2.0	4.7	56.6
Georgia.....	7	5	0.5	3.1	0.4	0.9	2.3	9.0	18.3	27.2	0.3	0.5	7.4
Alabama.....	4	4	0.4	2.7	0.3	0.7	2.0	8.3	10.2	18.9	0.3	0.3	3.4
West South Central..	33	26	2.5	14.4	1.4	3.0	7.2	34.7	46.8	81.4	0.8	2.8	31.6
Louisiana.....	7	5	0.4	2.5	0.3	0.6	1.8	6.4	11.8	18.2	(D)	0.6	6.5
West.....	41	20	1.5	10.1	1.0	2.2	6.9	21.0	44.2	66.5	0.9	1.7	25.4
California.....	22	12	1.0	7.0	0.7	1.5	4.8	14.7	28.4	43.8	(D)	1.1	16.9

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
2952- --	ASPHALT FELTS AND COATINGS; TOTAL.....		(X)	524.6	(X)	459.5
29521 --	Asphalt and tar saturated felts and boards for nonbuilding use....		(X)	26.3	(X)	21.1
29521 11	Felts, for other than building purposes (automotive, etc.).....	1,000 short tons.....	139.7	10.3	118.5	11.4
29521 31	Asphalt and tar products, except felts, coatings, cement, for nonbuilding use (i.e., automotive, etc.).....	..do.....	(S)	15.1	144.5	9.6
29521 00	Asphalt and tar saturated felts and boards for nonbuilding use, n.s.k.....		(X)	0.9	(X)	(X)
29522 --	Roofing asphalts and pitches, coatings, and cements.....		(X)	100.9	(X)	94.4
29522 12	Roofing asphalt.....	1,000 short tons.....	1,528.7	43.1	1,428.8	40.1
29522 31	Coal tar roofing pitch.....	..do.....	(X)	( <sup>1</sup> )	74.8	4.5
29522 51	Asphaltic roofing coatings and cements					
29522 55	Fibrated asphaltic coatings.....	1,000 gals....	(S)	35.1	(S)	30.9
29522 61	Nonfibrated asphaltic coatings.....	..do.....	(S)	4.6	(S)	14.3
29522 61	Asphaltic roofing cements.....	..do.....	(S)	4.6	(NA)	(NA)
29522 98	Other roofing asphalts and pitches, coatings, and cements, including coal tar base coatings and cements.....		(X)	<sup>1</sup> 10.7	(X)	-
29522 00	Asphalt and tar coatings, cements, and pitches, n.s.k.....		(X)	7.4	(X)	4.6
29523 --	Asphalt and tar roofing and siding products.....		(X)	375.5	(X)	338.6
29523 11	Asphalt roofing: Smooth-surfaced roll roofing and cap sheet, including sanded, talc, mica, and other fine material surfacing.....	Million sales squares.....	16.9	26.5	11.5	17.1
29523 13	Mineral-surfaced roll roofing and cap sheet (including 17 inch and 19 inch selvage edged).....	..do.....	13.7	30.5	13.5	29.7
29523 14	Strip shingles: Self-sealing.....	..do.....	19.1	114.9	8.2	48.6
29523 16	Standard or regular.....	..do.....	23.3	119.5	28.0	141.1
29523 17	Individual shingles, all styles.....	..do.....	4.0	20.7	4.4	22.7
29523 31	Asphalt building sidings: Roll form and shingle form, all patterns.....	..do.....	0.4	1.1	0.8	2.0
29523 35	Mineral-surfaced insulating board base siding (all types and finishes).....	..do.....	0.3	4.1	0.8	12.0
29523 51	Saturated felts: Asphalt saturated felts for roofing and siding.....	1,000 short tons.....	864.8	47.6	933.4	51.3
29523 55	Tar saturated felts for roofing and siding.....	..do.....	46.6	3.6	50.3	3.4
29523 98	Other asphalt and tar products (for roofing and siding, including board products and sheathings).....		(X)	2.8	(X)	7.3
29523 00	Asphalt and tar roofing and siding products, n.s.k.....		(X)	4.2	(X)	3.4
29520 00	Asphalt felts and coatings, n.s.k. (For companies with 10 or more employees. See Note.).....		(X)	19.0		
29520 02	Asphalt felts and coatings, n.s.k. (For companies with less than 10 employees. See Note.).....		(X)	2.9	(X)	5.4

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

- Represents zero. (NA) Not available. (S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review. (X) Not applicable.

<sup>1</sup>Code 29522 31 combined with code 29522 98 to avoid disclosing figures for individual companies.

## 1967 CENSUS OF MANUFACTURES

TABLE 4. **Materials Consumed, by Kind: 1967 and 1963**

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 2952.--ASPHALT FELTS AND COATINGS					
	Materials, containers, and supplies, total.....		(X)	315.7	(X)	285.0
	Asphalt:					
291191	Less than 200 penetration.....	1,000 short tons.	3,127.7	62.8	3,280.8	67.8
291195	200 and over penetration.....	Million bbls.....	10.2	27.6	8.6	25.9
266101	Roofing felts (unsaturated), other construction paper and insulating board.....	1,000 short tons.	1,261.4	80.3	1,283.2	77.4
329501	Roofing granules.....	..do.....	1,815.3	46.7	1,686.4	43.8
144201	Sand and Gravel.....	..do.....	557.7	2.9	(NA)	(NA)
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	73.7	(X)	62.6
973000	Materials, containers, and supplies, n.s.k. <sup>1</sup> .....		(X)	21.7	(X)	7.6

<sup>1</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

n.s.k. Not specified by kind. (X) Not applicable.

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 2952, these small establishments accounted for approximately 0.5 percent of payrolls and 0.5 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

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More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

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## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

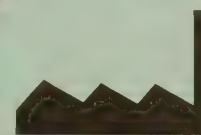
**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# 1967 CENSUS OF MANUFACTURES



MC67(P)-29A-4

## INDUSTRY SERIES

### Petroleum and coal products, n.e.c.

SIC Code 2999

**preliminary  
report**

The Products of Petroleum and Coal, Not Elsewhere Classified, Industry includes establishments primarily engaged in manufacturing fuel briquettes, boulets, packaged fuel, powdered fuel, and other products of petroleum and coal, not elsewhere classified.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Petroleum and Coal Products, N.E.C., Industry amounted to \$79.8 million, an increase of 12 percent compared with 1963. Value added by

manufacture at \$24.4 million in 1967 was 16 percent more than value added in 1963. Average employment in the industry showed a decrease of 27 percent from 1963 to a total of 1.1 thousand employees in 1967.

Of the \$79.8 million total value of shipments and other receipts of establishments classified as petroleum and coal products, n.e.c., \$4 million were products primary to other industries; and \$5.9 million were receipts for miscellaneous activities. The industry shipments of primary products represented 99 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 96 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture  (million dollars)	Cost of materials  (million dollars)	Value of shipments  (million dollars)	Capital expenditures, new  (million dollars)	End-of-year inventories  (million dollars)	Special-ization ratio  (per-cent)	Coverage ratio  (per-cent)
	Total  (number)	With 20 employ-ees or more (number)	Number  (1,000)	Payroll  (million dollars)	Number  (1,000)	Man-hours  (millions)	Wages  (million dollars)							
INDUSTRY 2999,--PETROLEUM AND COAL PRODUCTS, N.E.C.														
1967 Census....	47	15	1.1	6.9	0.8	1.7	5.2	24.4	56.2	79.8	1.8	10.0	99	92
1966 ASM <sup>1</sup> .....	(NA)	(NA)	1.2	6.7	0.9	1.8	5.0	22.0	42.7	65.0	0.6	12.9	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	1.1	6.6	0.8	1.7	4.5	22.6	42.5	64.6	0.4	15.3	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	1.5	9.0	1.2	2.4	6.5	23.1	49.5	72.1	0.7	16.4	(NA)	(NA)
1963 Census....	67	17	1.5	9.0	1.2	2.4	6.5	21.0	49.6	71.5	1.8	15.3	96	91
1962 ASM <sup>1</sup> .....	(NA)	(NA)	*3.0	*14.0	*2.5	*4.8	*10.1	*33.8	*71.3	*103.2	*4.6	*23.6	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	*3.0	*13.2	*2.5	*4.5	*9.4	*37.2	*68.1	*102.6	*4.6	*22.1	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	*3.1	*15.3	*2.5	*6.1	*10.9	*32.5	*68.1	*99.7	*1.3	*21.0	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	*2.5	*11.0	*2.1	*3.9	*8.1	*29.2	*49.9	*78.6	*1.9	*18.9	(NA)	(NA)
1958 Census <sup>2</sup> ...	84	33	2.3	10.5	1.8	3.4	7.6	26.9	48.7	74.9	1.3	19.6	95	96

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director

The total value of petroleum and coal products, n.e.c., shipped by all producers in 1967 was \$79.6 million of which \$73.5 million, or 92 percent, were shipped by plants classified in industry 2999, Petroleum and Coal Products, N.E.C., while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 91 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 2999.--PETROLEUM AND COAL PRODUCTS, N.E.C.												
United States, total.....	47	15	1.1	6.9	0.8	1.7	5.2	24.4	56.2	79.8	1.8	1.5	21.0
North Central.....	25	9	0.7	3.8	0.5	1.1	2.9	10.6	23.9	34.4	(D)	0.9	8.6

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (\$1,000)	Quantity	Value (\$1,000)
2999- --	PETROLEUM AND COAL PRODUCTS, N.E.C., TOTAL.....	.....	(X)	79.6	(X)	69.3
29990 15	Packaged fuel and fuel briquets (except wood charcoal briquets)...	1,000 tons...	(S)	11.5	927	18.2
28990 98	Other petroleum and coal products, including calcined petroleum coke.....	.....	(X)	64.1	(X)	49.0
29990 00	Products of Petroleum and coal, n.e.c., n.s.k. (For companies with 10 or more employees. See Note.).....	.....	(X)	2.9	} (X)	2.0
29990 02	Products of petroleum and coal, n.e.c., n.s.k. (For companies with less than 10 employees. See Note.).....	.....	(X)	1.1		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.e.c. Not elsewhere classified. n.s.k. Not specified by kind. (S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(Not applicable to this report)



## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 2999, these small establishments accounted for approximately 2 percent of payrolls and 2 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.

# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

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These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

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# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

**Textile mill products • Apparel and leather • Chemicals, rubber, and plastics • Machinery and equipment • Primary metals • Intermediate metal products • Processed foods • Lumber, furniture, and paper products • Stone, clay, and glass products.**

A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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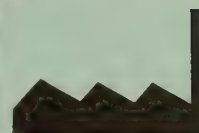








# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

**preliminary  
report**

### Tires and inner tubes

SIC Code 3011

The Tires and Inner Tubes Industry includes establishments primarily engaged in manufacturing pneumatic casings, inner tubes, and solid and cushion tires for all types of vehicles, airplanes, farm equipment, and children's vehicles; tiring; and camelback, and tire repair and retreading materials.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Tires and Inner Tubes Industry amounted to \$3,733.9 million, an increase of 27 percent compared with 1963. Value added by

manufacture at \$1,823.0 million in 1967 was 38 percent more than value added in 1963. Average employment in the industry showed an increase of 9 percent from 1963 to a total of 92.7 thousand employees in 1967.

Of the \$3,733.9 million total value of shipments and other receipts of establishments classified in the Tires and Inner Tubes Industry, \$175.4 million were products primary to other industries; and \$455.4 million were receipts for miscellaneous activities. The industry shipments of primary products represented 95 percent of the total manufactured product shipments, primary and secondary. This percent, is called the specialization ratio for the industry.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3011.--TIRES AND INNER TUBES														
1967 Census....	182	110	92.7	774.5	71.4	136.5	573.8	1,823.0	1,895.2	3,733.9	198.8	526.0	95	99
1966 ASM <sup>1</sup> .....	(NA)	(NA)	93.1	778.7	71.8	149.4	586.9	1,767.7	2,000.4	3,715.8	153.0	531.0	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	88.7	719.4	68.2	141.5	536.4	1,607.2	1,818.3	3,381.2	159.5	472.8	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	85.8	663.7	66.4	136.6	494.3	1,362.6	1,713.5	3,048.4	132.7	448.9	(NA)	(NA)
1963 Census....	155	96	85.3	621.7	66.3	131.8	460.1	1,321.7	1,623.1	2,949.7	112.8	413.2	(D)	99
1962 ASM <sup>1</sup> .....	(NA)	(NA)	86.3	618.8	67.6	137.6	463.1	1,278.1	1,602.3	2,883.7	123.3	408.6	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	86.2	569.0	66.4	129.5	419.1	1,260.8	1,443.6	2,723.0	113.8	408.6	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	92.0	589.6	72.2	140.2	438.5	1,271.6	1,607.9	2,844.3	133.4	423.0	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	94.6	596.4	75.3	147.0	452.0	1,313.4	1,660.6	2,947.1	73.9	404.7	(NA)	(NA)
1958 Census <sup>2</sup> ...	123	86	89.4	521.9	70.0	133.3	388.7	1,180.0	1,386.7	2,577.8	72.3	371.8	91	99

(NA) Not available. (D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

**BUREAU OF THE CENSUS** George Hay Brown, Director

The total value of tires and inner tubes shipped by all producers in 1967 was \$3,133.3 million of which \$3,103.1 million, or 99 percent, were shipped by plants classified in industry 3011, Tires and Inner Tubes, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 99 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3011. --TIRES AND INNER TUBES													
United States, total.....	182	110	92.7	774.5	71.4	136.5	573.8	1,823.0	1,895.2	3,733.9	198.8	85.3	1,321.7
West.....	34	21	9.0	75.0	6.6	12.5	52.4	155.1	166.2	328.4	9.4	9.3	117.5
Northeast.....	27	18	11.6	88.7	9.4	17.8	69.0	229.0	226.4	456.5	20.6	10.2	165.2
Pennsylvania.....	15	10	6.2	45.4	5.0	9.1	34.0	122.6	105.8	227.7	10.0	5.5	101.4
East North Central....	47	29	42.7	377.1	31.0	58.2	264.7	817.2	842.0	1,674.0	71.6	41.5	609.3
Ohio.....	26	17	31.1	277.2	22.4	41.6	193.2	576.9	617.9	1,203.8	49.1	31.0	437.7
West North Central....	13	5	7.5	62.8	6.3	12.3	50.4	169.0	168.6	330.8	17.0	6.2	114.0
South.....	61	36	21.9	170.9	18.2	35.8	137.4	452.7	492.0	944.3	80.2	18.2	315.9
East South Central..	19	16	12.1	95.7	10.1	19.6	77.5	230.8	284.3	514.1	24.6	10.4	168.7
Texas.....	14	6	2.9	21.1	2.4	4.6	16.5	73.2	70.0	144.2	3.6	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	1967			1963		
			Production for all purposes (quantity)	Total shipments, including interplant transfers		Production for all purposes (quantity)	Total shipments, including interplant transfers	
				Quantity	Value (million dollars)		Quantity	Value (million dollars)
3011- --	TIRES AND INNER TUBES, TOTAL.....		(X)	(X)	3,133.3	(X)	(X)	2,419.8
30111 11	Passenger car and motorcycle pneumatic tires (casings).....	Million tires	143.7	146.2	1,713.6	123.5	121.9	1,285.9
30112 11	Truck and bus (and off-the-highway) pneumatic tires. ....do.....		19.7	19.9	829.4	17.0	16.5	659.5
30113 --	Other pneumatic tires and solid tires.....		(X)	(X)	274.4	(X)	(X)	186.8
30113 11	Aircraft.....	Million tires	0.8	0.9	51.8	0.6	0.6	31.4
30113 13	Tractor and implement (farm, garden, and industrial).....	..do.....	6.0	6.0	135.0	3.6	3.5	90.2
30113 15	Industrial.....	..do.....	5.2	5.2	29.8	3.2	3.1	21.9
30113 17	Bicycle casings and single tube tires.....	..do.....	10.2	10.3	12.8	9.6	9.7	10.2
	Solid tires:							
30113 33	Industrial and highway.....	..do.....	1.1	1.2	20.9	(S)	(S)	17.1
30113 35	Bogie, idler, and support rollers.....	Million units	0.2	0.2	2.6			
	Other solid and semipneumatic:							
30113 41	2.00" and larger, except hand lawnmower, baby carriage, tricycle, juvenile, etc.....	Million tires	7.0	7.1	5.7	(S)	(S)	5.2
30113 51	Less than 2.00", including hand lawnmower, baby carriage, tricycle, juvenile, etc.....	..do.....	59.2	56.4	15.8	(S)	(S)	10.8
30114 --	All inner tubes.....		(X)	(X)	112.9	(X)	(X)	95.1
30114 21	Passenger car and motorcycle.....	Million tubes	28.7	29.6	40.3	28.4	28.8	39.7
30114 23	Truck and bus, including off-the-highway.....	..do.....	13.5	13.8	44.5	11.4	11.5	36.3
30114 24	Aircraft.....	..do.....	0.3	0.3	2.1	0.3	0.3	1.9
30114 25	Tractor and implement (farm, garden, and industrial).....	..do.....	4.7	4.7	15.5	2.8	2.8	8.2
30114 26	Industrial.....	..do.....	2.8	3.1	3.4	2.6	2.6	2.9
30114 27	Bicycle.....	..do.....	12.1	12.3	7.1	9.8	10.1	6.2
30115 --	Tread rubber, tire sundries, and repair materials, total.....		(X)	(X)	198.1	(X)	(X)	192.5
30115 11	Tread rubber (camelback), including slab rubber for use in automatic tread rubber extruding machines.....	Million lbs..	566.1	562.9	150.0	515.4	518.4	140.7
30115 31	Tire flaps.....	Million units	13.8	12.3	16.0	12.2	9.1	12.6
30115 39	Other tire sundries, repair materials and tiring..	Million lbs..	38.6	40.5	30.8	(S)	(S)	35.9
30115 00	Tread rubber, tire sundries, and repair materials, n.s.k.....		(X)	(X)	1.3	(X)	(X)	3.3
30110 00	Tires and inner tubes, n.s.k. (For companies with 10 or more employees. See Note.).....		(X)	(X)	2.6	(X)	(X)	-
30110 02	Tires and inner tubes, n.s.k. (For companies with less than 10 employees. See Note.).....		(X)	(X)	2.3	(X)	(X)	-

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

- Represents zero. n.s.k. Not specified by kind. (S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review. (X) Not applicable.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
INDUSTRY 3011.--TIRES AND INNER TUBES						
	Materials, containers, and supplies, total.....		(X)	1,514.8	(X)	1,324.8
	Natural Rubber:					
086113	Latex (dry solids content).....	1,000 long tons..	339.5	156.8	1.7	1.2
086115	Dry.....	do.....			296.3	169.0
	Synthetic Rubber:					
282203	Butadiene-styrene type.....	do.....	748.7	296.6	643.4	272.6
282204	Butyl type.....	do.....	61.2	36.0	48.4	28.1
282205	Neoprene.....	do.....	6.5	6.0	7.4	6.8
282206	N-type (butadiene acrytonitrile).....	do.....	1.7	1.3	2.4	1.2
282211	Stereo polybutadiene elastomers (solution-polymerized polybutadiene).....	do.....	154.8	80.2	( <sup>1</sup> )	( <sup>1</sup> )
282212	Other stereo elastomers, including solution-polymerized polyisoprene, and ethylene-propylene copolymers and terpolymers.....	do.....	34.5	16.2	( <sup>1</sup> )	( <sup>1</sup> )
282208	Polyurethane.....	do.....	0.7	0.5	0.1	0.2
282209	Other elastomers.....	do.....	12.6	5.6	1.9	1.4
303101	Reclaimed rubber (excluding "mud" and crumb or ground scrap).....	do.....	136.7	32.1	175.5	36.4
306980	Rubber compounds and mixtures purchased (dry rubber solids content).....	do.....	67.7	30.8	28.5	13.0
281833	Rubber processing chemicals.....	do.....	(X)	67.8	(X)	49.1
281835	Plasticizers.....	million pounds...	218.8	12.7	202.1	9.1
289501	Carbon black.....	do.....	1,155.9	93.3	1,046.5	83.3
281600	Inorganic pigments.....	do.....	191.2	19.7	218.3	16.6
282130	Thermoplastic resins including modified resins.....	do.....	21.5	3.2	9.0	1.5
282140	Thermosetting resins.....	do.....	3.2	0.6	4.4	2.0
	Tire cord and tire fabric:					
229601	Cotton cord.....	do.....	2.0	1.5	0.9	0.8
229602	Rayon cord.....	do.....	105.4	65.4	179.3	108.4
229603	Nylon cord.....	do.....	231.0	228.7	192.0	210.9
229609	Chafer and other tire fabrics.....	do.....	59.3	57.6	21.2	20.9
	Other fabrics:					
220311	Cotton.....	do.....	10.1	6.4	(D)	(D)
220312	Rayon.....	do.....	22.0	13.6	4.9	3.3
220313	Nylon.....	do.....	20.8	21.6	3.4	3.2
220319	Other.....	do.....	3.2	1.9	7.0	2.3
342956	Hose fittings and couplings.....	do.....	(D)	(D)	(X)	1.8
331017	Steel wire.....	1,000 short tons..	69.0	27.0	68.4	26.0
260091	Paper and paperboard containers and shipping sacks, including corrugated boxes.....	do.....	(X)	8.6	(X)	(NA)
970099	All other materials and components, parts, containers, and supplies consumed.....	do.....	(X)	195.8	(X)	191.5
973000	Materials, containers, supplies, n.s.k.....	do.....	(X)	27.3	(X)	13.4

(D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or from related figures. (NA) Not available. n.s.k. Not specified by kind.  
 (X) Not applicable.

<sup>1</sup>Included in code 282209 in 1963.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3011, these small establishments accounted for approximately 0 percent of payrolls and 0 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

**U.S. DEPARTMENT OF COMMERCE  
BUREAU OF THE CENSUS  
WASHINGTON, D.C. 20233**

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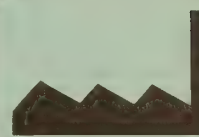
**OFFICIAL BUSINESS**

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U.S. DEPARTMENT OF COMMERCE**





# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

**preliminary  
report**

### Rubber footwear

SIC Code 3021

The Rubber Footwear Industry includes establishments primarily engaged in manufacturing all rubber footwear, waterproof fabric upper footwear, and other fabric upper footwear having rubber soles vulcanized to the uppers. Establishments primarily engaged in manufacturing rubber, composition, and fiber heels, soles, soling strips, and related shoe making and repairing materials are classified in industry 3069.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Rubber Footwear Industry amounted to

\$428.9 million, an increase of 21 percent compared with 1963. Value added by manufacture at \$247.2 million in 1967 was 14 percent more than value added in 1963. Average employment in the industry showed an increase of 1 percent from 1963 to a total of 29.5 thousand employees in 1967.

Of the \$428.9 million total value of shipments and other receipts of establishments classified in the Rubber Footwear Industry, \$53.2 million were products primary to other industries; and \$25.6 million were receipts for miscellaneous activities. The industry shipments of primary products represented 87 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 93 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3021.—RUBBER FOOTWEAR														
1967 Census.....	64	54	29.5	143.0	26.0	47.3	114.6	247.2	180.0	428.9	10.3	92.9	87	94
1966 ASM <sup>1</sup> .....	(NA)	(NA)	28.7	140.0	25.2	47.6	113.1	241.8	168.1	410.2	18.6	90.9	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	30.0	139.9	26.4	49.2	113.5	245.9	160.4	398.0	9.9	91.0	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	29.6	139.1	26.5	50.0	114.6	231.8	154.5	391.7	7.3	81.7	(NA)	(NA)
1963 Census.....	53	46	29.1	130.4	26.0	48.2	105.8	217.0	141.1	354.2	6.9	86.4	93	90
1962 ASM <sup>1</sup> .....	(NA)	(NA)	27.1	126.4	24.2	46.6	104.2	214.1	130.6	330.4	7.4	77.7	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	23.8	107.4	21.1	40.8	87.2	182.3	109.0	287.2	4.8	61.8	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	22.0	96.4	19.1	36.6	76.7	162.2	200.6	265.5	4.5	56.8	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	22.0	95.7	19.3	37.4	77.3	161.7	98.3	250.6	4.2	60.9	(NA)	(NA)
1958 Census <sup>2</sup> ...	27	26	20.4	85.6	17.6	34.1	68.6	149.6	81.7	229.4	3.1	49.1	(D)	(D)

(NA) Not available. (D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

The total value of rubber footwear shipped by all producers in 1967 was \$373.9 million of which \$350.1 million, or 94 percent, were shipped by plants classified in industry 3021, Rubber Footwear, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 90 percent in 1963.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total	With 20 employees or more (number)	Number	Payroll (million dollars)	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
INDUSTRY 3021.—RUBBER FOOTWEAR													
United States, total.....	64	54	29.5	143.0	26.0	47.3	114.6	247.2	180.0	428.9	10.3	29.1	217.0
Maine.....	6	6	1.3	4.6	1.2	2.1	3.7	6.2	5.5	11.2	1.1	0.8	1.3

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	1967			1963		
			Production for all purposes (quantity)	Total shipments, including interplant transfers		Production for all purposes (quantity)	Total shipments, including interplant transfers	
				Quantity	Value (million dollars)		Quantity	Value (million dollars)
3021- --	RUBBER FOOTWEAR, TOTAL.....		(X)	(X)	373.9	(X)	(X)	339.6
	Canvas footwear, total.....	Million pairs	147.6	152.7	278.5	152.9	148.3	268.2
30210 11	Bals.....	...do.....	21.7	22.0	48.1	23.9	24.1	48.8
30210 13	Oxfords.....	...do.....	98.8	103.5	190.0	102.0	97.6	179.6
30210 15	Specialty shoes.....	...do.....	27.1	27.2	40.4	26.9	26.6	39.8
	Waterproof footwear, total.....	...do.....	23.3	24.3	75.7	20.9	21.3	65.5
30210 21	Boots.....	...do.....	4.9	5.1	21.7	1.5	1.5	9.6
30210 31	Lumberman and pacs.....	...do.....	0.9	0.9	6.2	1.1	1.1	8.3
	Arctics and gaiters:							
30210 41	Buckle and automatic, except style.....	...do.....	5.4	6.1	18.0	4.6	4.8	16.7
30210 45	Style, rubber and cloth.....	...do.....	7.2	7.4	21.4	6.1	6.2	18.5
30210 51	Light and heavy rubbers.....	...do.....	4.9	4.8	8.4	7.6	7.6	12.4
30210 98	Other rubber footwear.....	...do.....	7.4	7.4	14.2			
30210 00	Rubber footwear, n.s.k. (For companies with 10 or more employees. See Note.).....	...do.....	(X)	(X)	5.3	(NA)	(NA)	5.8
30210 02	Rubber footwear, n.s.k. (For companies with less than 10 employees. See Note.).....	...do.....	(X)	(X)	0.2			

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3021---RUBBER FOOTWEAR					
	Materials, containers, and supplies, total.....		(X)	130.6	(X)	113.8
	Natural rubber:					
086113	Latex (dry solids content).....	1,000 long tons..	1.1	0.8	0.9	0.7
086115	Dry.....	..do.....	15.2	7.4	17.1	9.8
	Synthetic rubber:					
282203	Butadiene-styrene type.....	..do.....	16.5	7.4	11.9	5.8
282204	Butyl type.....	..do.....	(Z)	(Z)	(Z)	(Z)
282205	Neoprene.....	..do.....	0.4	0.3	0.2	0.2
282206	N-type (butadiene-acrylonitrile).....	..do.....	(D)	(D)	(D)	(D)
282211	Stereo polybutadiene elastomers (solution-polymerized polybutadiene).....	..do.....	0.6	0.3	(X)	(NA)
282212	Other stereo elastomers, including solution-polymerized polyisoprene, and ethylene-propylene copolymers and terpolymers.....	..do.....	2.2	1.1	(X)	(NA)
282209	Other elastomers.....	..do.....	1.0	0.8	(D)	(D)
303101	Reclaimed rubber (excluding "mud" and crumb or ground scrap).....	..do.....	0.8	0.2	1.3	0.2
306980	Rubber compounds and mixtures purchased (dry rubber solids content).....	..do.....	5.7	3.6	4.0	4.2
281833	Rubber processing chemicals.....	..do.....	(X)	5.4	(X)	4.7
281835	Plasticizers.....	Million pounds..	4.3	0.5	3.9	0.8
289501	Carbon black.....	..do.....	1.6	0.2	2.0	0.2
281600	Inorganic pigments.....	..do.....	30.1	1.4	9,537	0.6
282130	Thermoplastic resins including modified resins.....	..do.....	20.1	4.0	2.4	0.5
	Other fabrics:					
220311	Cotton.....	..do.....	31.8	33.2	27.6	27.0
220312	Rayon.....	..do.....	(D)	(D)	-	-
220313	Nylon.....	..do.....	0.5	0.7	0.5	0.7
220315	Polyester.....	..do.....	(D)	(D)	(X)	(NA)
220319	Other.....	..do.....	2.0	2.8	1.3	2.5
260091	Paper and paperboard containers and shipping sacks, including corrugated boxes.....		(X)	6.2	(NA)	(NA)
970099	All other materials and components, parts, containers, and supplies.....		(X)	43.9	(X)	41.4
973000	Materials, containers, supplies, n.s.k. <sup>1</sup> .....		(X)	10.4	(X)	13.9

- Represents zero. (D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or from related figures. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable. (Z) Less than 0.1 when rounded.

<sup>1</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this included estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3021, these small establishments accounted for approximately 0.1 percent of payrolls and 0.1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

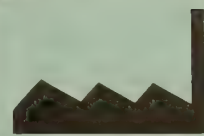
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-30A-3

## INDUSTRY SERIES

## preliminary report

### Reclaimed rubber

SIC Code 3031

The Reclaimed Rubber Industry includes establishments primarily engaged in reclaiming rubber from scrap rubber tires, tubes and miscellaneous waste rubber articles by processes which result in a devulcanized, depolymerized or regenerated, replasticized product containing added ingredients. This product is sold for use as a raw material in the manufacture of rubber goods with or without admixture with crude rubber or artificial rubber. Establishments primarily engaged in the assembly and wholesale sale of scrap rubber are classified in trade industries.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Reclaimed Rubber Industry amounted to \$43.8 million, a decrease of 10 percent compared with 1963. Value added by manufacture at \$23.4 million in 1967 was 15 percent less than value added in 1963. Average employment in the industry showed a decrease of 15 percent from 1963 to a total of 1.7 thousand employees in 1967.

Of the \$43.8 million total value of shipments and other receipts of establishments classified as reclaimed rubber, \$7.2 million were products primary to other industries; and \$1.2 million were receipts for miscellaneous activities. The industry shipments of primary products repre-

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total  (number)	With 20 employees or more (number)	Number  (1,000)	Payroll  (million dollars)	Number  (1,000)	Man-hours  (millions)	Wages  (million dollars)							
INDUSTRY 3031.—RECLAIMED RUBBER														
1967 Census....	24	13	1.7	11.8	1.4	2.5	8.9	23.4	19.6	43.8	1.6	5.4	83	75
1966 ASM <sup>1</sup> .....	(NA)	(NA)	2.0	14.0	1.6	3.0	10.3	25.3	27.6	52.7	1.3	8.0	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	2.0	14.0	1.6	3.1	10.4	26.4	25.5	52.5	1.7	7.6	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	1.9	13.2	1.5	3.0	9.9	24.4	20.4	44.4	3.6	6.7	(NA)	(NA)
1963 Census.....	13	13	2.0	13.6	1.7	3.1	10.4	27.4	21.7	48.9	1.3	5.8	(D)	77
1962 ASM <sup>1</sup> .....	(NA)	(NA)	2.1	13.5	1.7	3.1	10.2	26.7	22.9	49.8	1.0	5.3	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	2.2	13.2	1.8	3.2	10.1	25.4	20.7	46.5	1.2	5.5	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	2.4	14.5	2.0	3.7	11.4	29.1	21.7	49.9	2.8	5.9	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	2.3	14.1	2.0	3.8	11.3	25.0	20.7	47.0	1.1	5.0	(NA)	(NA)
1958 Census <sup>2</sup> ...	16	14	2.2	11.7	1.8	3.3	9.1	20.8	18.6	39.3	1.0	5.8	94	72

(D) Withheld to avoid disclosing figures for individual companies. (NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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**U.S. DEPARTMENT OF COMMERCE** **Maurice H. Stans, Secretary**  
**Rocco C. Siciliano, Under Secretary**  
**Harold C. Passer, Assistant Secretary for Economic Affairs**  
**BUREAU OF THE CENSUS** **George Hay Brown, Director**



sented 83 percent of the total manufactured product shipments, primary and secondary. This percent is called the specialization ratio.

The total value of reclaimed rubber shipped by all producers in 1967 was \$47.3 million of which \$35.4 million, or 75 percent, were shipped by plants classified in industry 3031, Reclaimed Rubber, while the remainder was shipped by plants classified in other industries. This percent,

called the coverage ratio, was 77 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
	INDUSTRY 3031. RECLAIMED RUBBER												
United States, total.....	24	13	1.7	11.8	1.4	2.5	8.9	23.4	19.6	43.8	1.6	2.0	27.4
East North Central....	11	6	1.2	8.5	1.0	1.7	6.4	16.1	14.8	31.1	1.2	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

**TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963**

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	1967			1963		
			Production for all purposes (quantity)	Total shipments, including interplant transfers		Production for all purposes (quantity)	Total shipments, including interplant transfers	
				Quantity	Value (million dollars)		Quantity	Value (million dollars)
3031- --	RECLAIMED RUBBER.....	Million lbs..	(X)	(X)	47.3	632.9	533.0	55.2
30310 11	Reclaimed rubber (any vulcanizable material, except reclaimed residue or "mud," derived from processing or treatment of natural or synthetic (chemical) vulcanized scrap rubber).....	do.....	547.4	468.7	46.4	632.9	533.0	55.2
30310 00	Reclaimed rubber, n.s.k. (For companies with 10 or more employees. See Note.).....	.....	(X)	(X)	0.6	}	-	-
30310 02	Reclaimed rubber, n.s.k. (For companies with less than 10 employees. See Note.).....	.....	(X)	(X)	0.3			

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind. (X) Not applicable.

**TABLE 4. Materials Consumed, by Kind: 1967 and 1963**

(Data on materials are not published separately for Industry 3031, Reclaimed Rubber, but are combined with the data for Industry 3069, Fabricated Rubber Products, N.E.C., and published in Table 4 of report MC67(P) 30A-4.)

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3031, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

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A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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Washington, D.C. 20233

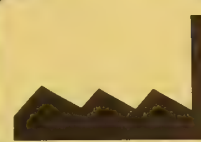
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# 1967 CENSUS OF MANUFACTURES



MC67(P)-30A-4

## INDUSTRY SERIES

**preliminary  
report**

### Fabricated rubber products, n.e.c.

SIC Code 3069

The Fabricated Rubber Products, Not Elsewhere Classified, Industry includes establishments primarily engaged in manufacturing industrial and mechanical rubber goods, rubberized fabrics and vulcanized rubber clothing, and miscellaneous rubber specialties and sundries. Establishments primarily engaged in rebuilding and retreading tires are classified in industry 7534.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Fabricated Rubber Products, N.E.C.,

Industry amounted to \$3,121.9 million, an increase of 20 percent compared with 1963. Value added by manufacture at \$1,730.6 million in 1967 was 21 percent more than value added in 1963. Average employment in the industry showed an increase of 6 percent from 1963 to a total of 140.5 thousand employees in 1967.

Of the \$3,121.9 million total value of shipments and other receipts of establishments classified as fabricated rubber products, n.e.c., \$354.8 million were products primary to other industries; and \$161.5 million were receipts for miscellaneous activities. The industry shipments of primary products represented 88 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 86 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)
INDUSTRY 3069.--FABRICATED RUBBER PRODUCTS, N.E.C.														
1967 Census....	1,186	668	140.5	916.6	106.7	213.4	613.7	1,730.6	1,396.4	3,121.9	134.3	410.0	88	89
1966 ASM <sup>1</sup> .....	(NA)	(NA)	144.0	917.7	109.9	225.4	620.0	1,726.7	1,442.1	3,139.0	98.3	410.4	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	139.3	854.5	106.1	215.8	576.5	1,588.4	1,330.2	2,911.0	94.1	366.0	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	134.0	795.6	101.9	207.2	536.7	1,518.5	1,238.8	2,733.2	73.5	354.4	(NA)	(NA)
1963 Census....	1,173	620	132.2	760.8	100.6	203.4	516.1	1,427.0	1,171.3	2,598.0	65.0	323.4	86	89
1962 ASM <sup>1</sup> .....	(NA)	(NA)	128.8	725.8	96.9	197.2	489.3	1,330.6	1,118.0	2,436.0	*78.8	316.0	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	121.6	664.2	90.8	182.4	438.5	1,192.8	1,019.4	2,212.5	50.0	289.5	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	127.7	670.1	96.4	192.9	449.2	1,161.8	1,057.9	2,225.5	52.3	288.1	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	130.7	678.3	100.4	202.4	464.0	1,199.0	1,029.1	2,205.0	48.4	304.4	(NA)	(NA)
1958 Census <sup>2</sup> ....	1,074	558	119.6	593.0	89.2	177.0	396.1	997.3	881.3	1,885.3	43.6	265.1	86	86

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued December 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**

The total value of fabricated rubber products, n.e.c., shipped by all producers in 1967 was \$2,915.6 million of which \$2,605.6 million, or 89 percent, were shipped by plants classified in industry 3069, Fabricated Rubber Products, N.E.C., while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 89 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3069.--FABRICATED RUBBER PRODUCTS, N.E.C.												
United States, total.....	1,186	668	140.5	916.6	106.7	213.4	613.7	1,730.6	1,396.4	3,121.9	134.3	132.2	1,427.0
New England.....	153	96	21.1	143.6	15.6	32.0	90.6	263.5	206.2	468.5	16.7	21.2	229.3
Massachusetts.....	81	50	11.7	83.8	8.2	17.3	50.1	146.7	125.0	270.8	8.8	12.0	138.4
Connecticut.....	47	31	5.2	34.3	3.9	8.1	22.4	65.1	47.5	112.6	6.2	(D)	(D)
Middle Atlantic.....	254	130	24.5	156.8	18.6	36.3	104.9	297.0	214.2	512.9	17.3	23.6	247.5
New Jersey.....	105	63	11.5	74.5	8.9	17.3	51.2	140.9	98.5	239.9	7.7	10.8	111.3
East North Central.....	378	235	58.5	401.1	43.9	86.7	268.4	685.2	613.2	1,295.3	58.9	57.0	599.5
Ohio.....	163	105	32.3	231.3	23.6	46.0	150.2	380.9	347.0	725.3	36.6	32.0	327.6
Indiana.....	48	34	12.6	82.4	9.8	19.1	59.3	131.4	125.7	258.9	7.8	(D)	(D)
Illinois.....	81	45	7.9	52.2	5.9	12.2	34.5	105.5	75.1	179.3	11.0	7.0	82.6
Michigan.....	60	38	4.8	29.4	3.9	7.9	20.7	54.8	56.9	110.8	3.1	(D)	(D)
Wisconsin.....	26	13	0.9	5.8	0.7	1.5	3.6	12.5	8.5	20.9	0.5	(D)	(D)
West North Central.....	53	26	4.9	29.6	4.0	7.7	22.0	74.5	37.1	112.6	11.8	3.8	44.5
Minnesota.....	21	12	1.4	8.8	1.1	2.2	6.6	19.1	9.4	28.2	1.2	(D)	(D)
South Atlantic.....	90	57	10.8	59.1	9.1	18.2	43.8	121.6	121.6	242.9	(D)	9.5	88.0
West Virginia.....	5	4	1.0	4.1	0.9	1.6	3.7	10.3	12.5	22.7	0.4	(D)	(D)
Georgia.....	24	16	1.1	5.5	0.9	1.9	3.6	14.0	31.5	46.2	(D)	1.4	12.2
East South Central.....	33	23	5.6	28.4	4.5	9.6	20.9	70.7	54.9	123.1	5.6	3.3	29.6
Tennessee.....	14	11	3.0	15.8	2.4	5.0	11.2	35.2	38.4	72.0	1.8	1.9	16.9
Alabama.....	5	2	0.1	0.5	0.1	0.2	0.3	0.7	0.6	1.4	(Z)	(D)	(D)
West South Central.....	51	23	3.3	16.5	2.7	5.7	12.3	34.4	36.8	71.2	(D)	2.2	19.4
West.....	174	78	11.8	81.5	8.3	17.1	50.8	183.8	112.2	295.4	11.7	11.8	169.2

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	1967			1963		
			Production for all purposes (quantity)	Total shipments, including interplant transfers		Production for all purposes (quantity)	Total shipments, including interplant transfers	
				Quantity	Value (million dollars)		Quantity	Value (million dollars)
3069- --	FABRICATED RUBBER PRODUCTS, N.E.C., TOTAL.....	.....	(X)	(X)	2,915.6	(X)	(X)	2,355.6
30691 --	Rubber belts and belting, total.....	.....	(X)	(X)	249.4	(X)	(X)	179.0
30691 11	Conveyor and elevator.....	Million lbs.	92.5	91.2	88.2	62.0	62.7	59.5
30691 13	Transmission:							
	Flat.....	do.....	9.4	9.4	13.3	(S)	(S)	14.4
	Other than flat:							
	Motor vehicles:							
30691 21	Pounds.....	do.....	21.7	21.4	35.0	17.7	19.7	35.2
30691 25	Units.....	Million units.....	49.6	-	-	45.4	-	-
30691 31	Industrial.....	Million lbs.	20.1	18.8	52.3	(S)	(S)	58.3
30691 41	Agricultural.....	do.....	5.5	5.4	12.9			
30691 51	Fractional horsepower, V-belts.....	do.....	8.0	7.7	15.2			
30691 59	Other.....	do.....	4.1	4.3	14.5			
30691 98	All other rubber and plastic belts and belting....	do.....	10.8	9.3	12.6	(S)	(S)	9.4
30691 00	Rubber belts and belting, n.s.k.....	.....	(X)	(X)	5.4	(X)	(X)	2.3
30692 --	Rubber hose and tubing, total.....	.....	(X)	(X)	392.6	(X)	(X)	297.4
	Hose:							
	Horizontal reinforced:							
	Textile:							
30692 12	Hydraulic.....	Million lbs.	19.8	19.6	28.4	(S)	(S)	34.4
30692 14	Other.....	do.....	19.3	18.7	13.0			
	Wire:							
30692 16	Hydraulic.....	do.....	53.3	52.1	58.7	31.4	31.0	42.3
30692 18	Other.....	do.....	11.4	11.5	14.5			
	Wrapped reinforced:							
	Handbuilt:							
30692 33	Wire.....	do.....	14.3	14.5	20.7	17.6	17.6	22.1
30692 35	Nonwire.....	do.....	9.3	9.2	11.3			
30692 39	Machine.....	do.....	18.0	18.0	21.1			
30692 42	Circular woven textile:							
	Single jacket.....	do.....	25.3	20.3	19.6	(S)	(S)	18.3
30692 44	Double jacket.....	do.....	12.0	12.1	12.8			
30692 63	Garden.....	do.....	33.8	33.6	13.4	34.2	33.9	13.6
	Continuous molded nonhydraulic, except garden hose:							
30692 51	Textile.....	do.....	79.0	79.3	50.3	(S)	(S)	133.3
30692 53	Wire.....	do.....	(S)	(S)	2.0			
30692 65	Chernak loom.....	do.....	3.4	3.5	4.5			
30692 67	Braided-helical wire.....	do.....	7.1	7.2	7.5			
30692 73	Type of construction, n.e.c., including railroad specification.....	do.....	(S)	(S)	79.3			
30692 81	Tubing, except medical and surgical and reinforced	do.....	35.3	34.1	18.7	20.3	20.4	12.0
30692 00	Rubber hose and tubing, n.s.k.....	.....	(X)	(X)	16.8	(X)	(X)	4.7
30693 --	Sponge and foam rubber goods, total.....	.....	(X)	(X)	276.8	(X)	(X)	226.4
30693 11	Latex foam:							
	Automotive seating.....	Million lbs.	32.6	33.0	19.3	36.9	37.0	26.1
30693 21	Upholstery:							
30693 29	Fully molded cushions.....	do.....	33.0	32.8	16.1	74.1	71.2	36.8
	Other, including stab stock, cored building stock, etc.....	do.....	36.5	36.6	23.6			
30693 31	Mattress cores (except polyurethane):							
	Pounds.....	do.....	23.1	-	-	24.1	-	-
30693 35	Units.....	Million units.....	0.6	0.6	12.5	0.6	0.6	12.6
30693 45	Pillows.....	Million units.....	2.6	2.9	5.3	2.9	2.9	4.8
30693 51	Carpet and rug cushions.....	Million yds.	31.6	31.6	24.2	(S)	(S)	8.3
30693 69	Other latex foam products, including hospital padding and topper pads.....	Million lbs.	(S)	(S)	59.3	(S)	(S)	59.1

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	1967			1963		
			Production for all purposes (quantity)	Total shipments, including interplant transfers		Production for all purposes (quantity)	Total shipments, including interplant transfers	
				Quantity	Value (million dollars)		Quantity	Value (million dollars)
	FABRICATED RUBBER PRODUCTS, N.E.C.--Continued							
	Sponge and foam rubber goods--Continued							
	Chemically blown sponge:							
	Open cell:							
30693 73	Carpet and rug cushions.....	Million sq. yds.....	91.8	93.2	67.5	97.3	100.3	75.3
30693 74	Automotive.....	Million lbs. (S)	(S)	(S)	15.0			
30693 75	Other.....	..do.....	19.5	19.0	7.9			
	Closed cell:							
30693 77	Automotive.....	..do.....	11.1	10.5	11.2	(X)	(X)	3.6
30693 78	Other.....	..do.....	(S)	(S)	13.5			
30693 00	Sponge and foam rubber goods, n.s.k.....		(X)	(X)	1.3			
30694 --	Rubber floor and wall covering, total.....		(X)	(X)	68.8			
	Mats, matting and stair treads:							
30694 21	Rolls.....	Million sq. yds.....	(S)	(S)	17.2	(S)	(S)	7.3
	Individual mats:							
30694 23	Automotive.....	..do.....	(S)	(S)	27.6	(S)	(S)	49.9
30694 25	All other, including stair treads.....	..do.....	(S)	(S)	7.9	(S)	(S)	12.4
	Other flooring:							
30694 27	Sheet goods.....	..do.....	(S)	(S)	16.1	(S)	(S)	6.3
30694 28	Tile.....	..do.....				5.7	5.8	12.6
30694 29	Wall coverings, including cove base, wainscoting, etc.....	..do.....				(S)	(S)	4.6
30694 00	Rubber floor and wall covering, n.s.k.....					(X)	(X)	0.2
30695 --	Mechanical rubber goods, n.e.c., total.....		(X)	(X)	1,085.3	(X)	(X)	850.7
	Hard rubber mechanical goods:							
	Battery, jars, boxes, and parts:							
30695 11	Jars and boxes.....	Million units.....	-	-	( <sup>1</sup> )	33.1	32.2	33.8
30695 15	Parts.....		(X)	(X)	40.0	(X)	(X)	24.7
30695 18	Other.....		(X)	(X)	29.9	(X)	(X)	25.5
	Other rubber mechanical goods:							
	Molded:							
30695 21	Automotive.....	Million lbs. (S)	(S)	(S)	165.2	(S)	(S)	141.8
30695 23	Adhered to metal, except automotive.....	..do.....	(S)	(S)	59.8	(S)	(S)	42.1
30695 25	Transportation, other than automotive.....	..do.....	(S)	(S)	12.8	(NA)	(NA)	(NA)
	Seals:							
30695 26	Bonded lip shaft seals.....		(X)	(X)	<sup>2</sup> 60.4	(NA)	(NA)	(NA)
30695 27	O-rings (including O-ring used as drive belts).....		(X)	(X)	55.4	(S)	(S)	37.8
30695 28	Packing (for sealing moving parts).....		(S)	(S)	<sup>2</sup> 29.5	(S)	(S)	69.8
30695 29	Other molded.....		(S)	(S)	146.4	(S)	(S)	118.0
	Extrusion and lathe cut (except tubing):							
	Extrusions only:							
30695 31	Automotive.....	Million lbs. (S)	63.6	63.1	32.5	(S)	(S)	78.5
30695 32	Other.....	..do.....	36.5	36.8	24.8			
	Lathe cut:							
30695 34	Automotive.....	..do.....	(S)	(S)	6.6	(S)	(S)	15.9
30695 36	Other.....	..do.....	13.9	13.2	11.5			
30695 51	Pressure sensitive tape, including friction.....		28.5	28.4	19.0	(S)	(S)	23.9
30695 71	Rolls, covered, including all industry rolls except graphic arts.....		(X)	(X)	32.8	(X)	(X)	21.4
30695 81	Tank blocks, treads, and band tracks.....		(X)	(X)	76.9	(X)	(X)	44.2
30695 83	Fuel cells.....		(X)	(X)	21.5	(X)	(X)	30.4
30695 85	Boats, pontoons, and life rafts.....		(X)	(X)	15.0	(X)	(X)	10.8
30695 98	Other, including sheet rubber and jar rings.....		(X)	(X)	<sup>1</sup> 153.0	(X)	(X)	102.3
30695 00	Mechanical rubber goods, n.e.c., n.s.k.....		(X)	(X)	92.3	(X)	(X)	29.8

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	1967			1963		
			Production for all purposes  (quantity)	Total shipments, including interplant transfers		Production for all purposes  (quantity)	Total shipments, including interplant transfers	
				Quantity	Value (million dollars)		Quantity	Value (million dollars)
	FABRICATED RUBBER PRODUCTS, N.E.C.--Continued							
30696 --	Rubber heels and soles, total.....		(X)	(X)	126.0	(X)	(X)	136.2
30696 11	Shoe products rubber, elastomer resin: Heels.....	Million pairs.....	127.1	129.9	21.9	200.7	201.1	30.7
30696 31	Soles.....	..do.....	130.0	125.4	50.1	140.8	140.4	49.1
30696 51	Soling slabs and top lift sheets.....	Million sq. ft.....	120.0	121.2	54.0	148.3	144.2	55.5
30696 00	Shoe products rubber, elastomer resin, n.s.k.....		(X)	(X)	-	(X)	(X)	0.9
30697 --	Druggist and medical sundries, total.....		(X)	(X)	84.2	(X)	(X)	79.2
30697 11	Rubber druggist and medical sundries including household gloves: Water bottles, fountain syringes, and combinations.....	1,000 gross. ..do.....	(S) 813.2	(S) 1,164.3	9.0 6.1	44.7 822.2	44.9 845.7	8.1 5.7
30697 31	Nipples and pacifiers.....							
30697 51	Gloves, including rubberized: Household.....	1,000 dozen pairs.....	2,032.5	2,004.5	11.1	1,865.5	1,846.9	10.8
30697 61	Surgical.....	..do.....	(S)	(S)	20.0	5,212.4	4,999.5	15.1
30697 75	Prophylactics (including rubber and other materials).....	1,000 dozen.	(S)	(S)	16.4	53,411.9	50,357.3	17.3
30697 76	Diaphragms, separate and in kits.....		(S)	(S)	1.3	(S)	(S)	2.6
30697 79	Other (including ice bags and caps, and medical- surgical tubing).....		(X)	(X)	20.3	(X)	(X)	17.8
30697 00	Druggist and medical sundries, n.s.k.....					(X)	(X)	2.2
30698 --	Other rubber goods, n.e.c., total.....		(X)	(X)	532.5	(X)	(X)	451.0
30698 14	Rubber coated fabrics: Garment fabrics.....		(S)	(S)	15.5	(S)	(S)	7.3
30698 16	Shoe and slipper fabrics.....		(S)	(S)	10.2	(S)	(S)	11.6
30698 17	Other coated fabrics, including automotive and furniture upholstery.....	Million sq. yds.....	45.1	44.6	53.3	(S)	(S)	36.3
30698 22	Unsupported film and sheeting, all thickness.....	..do.....	13.5	13.5	6.8	(NA)	(NA)	(NA)
30698 41	Rubber clothing: Industrial rubber gloves.....	1,000 dozen pair.....	1,177.1	1,367.2	12.0	1,663.4	1,628.6	12.5
30698 55	Bathing and shower caps.....	1,000 gross.	(S)	(S)	3.9	(S)	(S)	4.6
30698 58	Other rubber clothing (rainwear, aprons, dress shields, etc.).....		(X)	(X)	10.7	(X)	(X)	10.1
30698 61	Thread bare.....	Million lbs.	21.8	21.6	25.2	19.9	18.8	25.3
30698 64	Cement for sale as such: Latex type.....	Million gals.....	(S)	(S)	33.3	(S)	(S)	49.0
30698 65	Solvent type.....	..do.....	(S)	(S)	34.1	(S)	(S)	38.4
30698 68	Balloons: Toy and advertising.....	1,000 gross.	(S)	(S)	10.3	(S)	(S)	12.8
30698 69	Meteorological.....	..do.....	(S)	(S)	2.5	(S)	(S)	2.7
30698 73	Stationers' sundries: Bands.....	Million lbs.	15.1	14.0	9.5	(S)	(S)	7.6
30698 74	Other, including finger cots, erasers (excluding pencil plugs).....	..do.....	(S)	(S)	5.8	(S)	(S)	5.2
30698 79	Balls, except tennis, bowling, golf, footballs, and other inflatable athletic balls.....		-	-	-	(X)	(X)	2.6
30698 81	Toys, except balloons, balls, and dolls.....		-	-	4.1	(X)	(X)	8.2
30698 91	Compounds, or mixtures for sale or interplant transfers.....		(X)	(X)	168.3	(X)	(X)	118.4
30698 98	Other rubber goods, including rubber brushes, combs, mouthpieces, etc.....		(X)	(X)	106.6	(X)	(X)	85.5
30698 00	Other rubber goods, n.e.c., n.s.k.....		(X)	(X)	20.4	(X)	(X)	12.7
30690 00	Fabricated rubber products, n.e.c., n.s.k. (For companies with 10 or more employees. See Note.)...		(X)	(X)	85.7	(X)	(X)	42.4
30690 02	Fabricated rubber products, n.e.c., n.s.k. (For companies with less than 10 employees. See Note.)...		(X)	(X)	14.3			

See footnotes on next page.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Footnotes for Table 3--Industry 3069

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

- Represents zero. (NA) Not available. n.e.c. Not elsewhere classified. n.s.k. Not specified by kind. (X) Not applicable.  
(S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review.

<sup>1</sup>Code 30695 11 included in code 30695 98.

<sup>2</sup>Code 30695 26 requested for the first time in 1967--some or all of this production was probably reported in code 30695 28 in 1963.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3031 AND 3069.--RECLAIMED RUBBER, AND FABRICATED RUBBER PRODUCTS, N.E.C.					
	Materials, containers, and supplies, total.....		(X)	<sup>1</sup> 1,239.5	(X)	<sup>2</sup> 1,025.2
	Natural rubber:					
086113	Latex (dry solids contents).....	1,000 long tons..	53.4	30.0	37.9	29.8
086115	Dry.....	..do.....	77.4	38.6	78.2	49.3
	Synthetic rubber:					
282203	Butadiene-styrene type.....	..do.....	253.2	111.7	240.0	116.8
282204	Butyl type.....	..do.....	19.5	11.8	16.7	9.4
282205	Neoprene.....	..do.....	67.7	62.6	53.0	49.2
282206	N-type (butadiene-acrylonitrile).....	..do.....	27.3	33.7	25.5	25.7
282211	Stereo polybutadiene elastomers (solution polymerized polybutadiene).....	..do.....	9.2	4.4	(X)	(NA)
282212	Other stereo elastomers, including solution polymerized poly- isoprene, and ethylene propylene copolymers and terpolymers...	..do.....	17.5	10.2	(X)	(NA)
282208	Polyurethane.....	..do.....	1.7	4.9	0.6	1.3
282209	Other elastomers.....	..do.....	16.8	20.5	11.3	15.4
303101	Reclaimed rubber (excluding "mud" and crum or ground scrap).....	..do.....	48.1	10.3	<sup>3</sup> 81.5	12.8
306980	Rubber compounds and mixtures purchased.....	..do.....	50.0	32.2	26.6	18.4
281833	Rubber processing chemicals.....	..do.....	(X)	58.6	(X)	45.9
281835	Plasticizers.....	Million lbs.....	170.4	23.0	159.4	21.4
289501	Carbon black.....	..do.....	312.1	25.1	235.9	18.6
281600	Inorganic pigments.....	..do.....	390.4	22.9	403.7	20.1
282130	Thermoplastic resins including modified resins.....	..do.....	163.4	30.9	139.7	29.7
282140	Thermosetting resins.....	..do.....	14.2	4.2	<sup>2</sup> 20.2	7.5
	Tire cord and tire fabric:					
229601	Cotton cord.....	..do.....	2.1	1.1	0.8	0.4
229602	Rayon cord.....	..do.....	3.6	2.4	2.4	1.6
229603	Nylon cord.....	..do.....	4.7	4.8	(D)	(D)
229605	Polyester cord.....	..do.....	0.9	1.1	(NA)	(NA)
229609	Chafer and other tire fabrics.....	..do.....	2.4	1.9	1.1	0.8
	Other fabrics:					
220311	Cotton.....	..do.....	51.9	45.7	65.0	49.0
220312	Rayon.....	..do.....	21.3	13.0	17.5	9.2
220313	Nylon.....	..do.....	21.1	25.2	7.0	11.1
220315	Polyester.....	..do.....	2.3	3.0	(NA)	(NA)
220319	Other.....	..do.....	(S)	18.9	7.3	7.9
342956	Hose fittings and couplings.....	..do.....	(X)	11.9	(X)	6.8
331017	Steel wire.....	1,000 short tons.	27.9	13.3	24.4	12.3
260091	Paper and paperboard containers and shipping sacks,including corrugated boxes.....	..do.....	(X)	26.4	(X)	(NA)
970099	All other materials, and components, parts, containers, and supplies consumed.....	..do.....	(X)	386.0	(X)	386.5
976000	Materials, containers, supplies, n.s.k. <sup>4</sup> .....	..do.....	(X)	149.2	(X)	64.3

(D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or from related figures. (NA) Not available. n.e.c. not elsewhere classified. n.s.k. Not specified by kind.

(S) Withheld because the estimate did not meet publication standards on the basis of a general consistency review. (X) Not applicable.

<sup>1</sup>Includes \$21.8 million for Industry 3031 and \$1,217.7 million for Industry 3069.

<sup>2</sup>Includes \$17.2 million for Industry 3031 and \$1,008.1 million for Industry 3069.

<sup>3</sup>Included in these quantity figures are the following percentages which were produced and consumed in the same establishments, and for which no value is shown: reclaimed rubber, between 20 and 25 percent; Thermosetting resins, between 3 and 5 percent.

<sup>4</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this included estimates for companies that were not mailed report forms.

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3069, these small establishments accounted for approximately 0.4 percent of payrolls and 0.5 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products**--In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture**--This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment**--For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories**--Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





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### Miscellaneous plastics products

SIC Code 3079

The Miscellaneous Plastics Products Industry includes establishments primarily engaged in molding primary plastics for the trade, and fabricating miscellaneous finished plastics products. Establishments primarily engaged in manufacturing plastics materials in the form of sheets, rods, tubes, granules, powders, or liquids are classified in industry 2821, and those primarily engaged in manufacturing artificial leather in industry 2295.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Miscellaneous Plastics Products Industry amounted to \$5,460.5 million, an increase of 73 percent compared with 1963. Value added by manufacture at \$2,993.1 million in 1967 was 80 percent more than value added in 1963. Average employment in the industry showed an increase of 53 percent from 1963 to a total of 254.0 thousand employees in 1967.

Of the \$5,460.5 million total value of shipments and other receipts of establishments classified as miscellaneous plastics products, \$348.6 million

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
INDUSTRY 3079.--MISCELLANEOUS PLASTICS PRODUCTS														
1967 Census....	5,002	2,274	254.0	1,451.4	206.0	418.6	1,010.7	2,993.1	2,496.0	5,460.5	334.9	637.5	93	(NA)
1966 ASM <sup>1</sup> .....	(NA)	(NA)	224.0	1,221.6	182.1	377.4	844.0	2,515.6	2,187.4	4,658.3	328.7	536.9	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	205.3	1,086.2	166.6	337.4	748.6	2,213.6	1,942.0	4,120.4	250.8	459.6	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	178.8	935.3	144.4	299.2	643.0	1,853.5	1,662.0	3,505.4	182.2	388.6	(NA)	(NA)
1963 Census....	4,334	1,674	166.3	837.6	134.3	272.0	580.0	1,660.9	1,522.9	3,165.4	157.5	361.0	92	80
1962 ASM <sup>1</sup> .....	(NA)	(NA)	153.8	765.1	123.4	252.2	517.7	1,466.7	1,381.9	2,819.6	143.6	324.6	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	136.8	665.1	108.0	221.1	446.8	1,254.3	1,235.0	2,473.2	112.9	290.7	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	134.0	627.5	106.2	216.2	424.0	1,147.9	1,172.1	2,303.2	105.7	272.4	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	129.5	583.8	103.1	209.5	401.5	1,093.7	1,129.8	2,217.7	86.7	254.4	(NA)	(NA)
1958 Census <sup>2</sup> ...	3,222	1,143	116.3	511.2	92.0	183.3	348.9	928.9	948.3	1,867.9	77.2	235.8	91	85

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 2 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

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**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**

were products primary to other industries; and \$193.4 million were receipts for miscellaneous activities. The industry shipments of primary products represented 93 percent of the total manufactured product shipments, primary and

secondary. This percent, called the specialization ratio for the industry, was 92 percent in 1963.

For an explanation of the terms used in the tables, see appendix at the end of this report.

#### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3079, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-30D, Shipments of Selected Plastics Products



TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3079.—MISCELLANEOUS PLASTICS PRODUCTS													
United States, total.....	5,002	2,274	254.0	1,451.4	206.0	418.6	1,010.7	2,993.1	2,496.0	5,460.5	334.9	166.3	1,660.9
New England.....	507	277	32.0	170.7	26.6	52.1	122.3	349.9	282.6	624.9	33.6	21.9	191.7
Maine.....	13	9	1.7	7.8	1.3	2.8	5.7	15.2	17.0	32.4	3.4	1.1	9.7
New Hampshire.....	22	13	3.6	18.4	3.3	6.5	14.9	32.2	26.5	58.1	(D)	1.6	11.0
Vermont.....	11	6	1.0	4.5	0.9	1.8	3.4	8.3	4.9	13.1	(D)	(D)	(D)
Massachusetts.....	298	174	17.2	91.7	14.1	27.2	64.6	182.8	163.5	340.9	17.7	12.0	100.9
Rhode Island.....	45	18	2.3	10.7	2.1	4.0	8.4	45.2	20.6	64.5	2.0	(D)	(D)
Connecticut.....	118	57	6.2	37.6	4.9	9.9	25.4	66.2	50.2	115.9	(D)	4.6	37.4
Middle Atlantic.....	1,322	611	63.1	367.5	50.8	102.3	250.5	703.5	611.8	1,307.1	72.1	45.0	417.8
New York.....	669	282	25.0	143.1	20.4	40.7	96.9	263.7	210.3	471.1	20.5	19.2	171.5
New Jersey.....	402	209	22.0	129.7	17.6	35.8	88.1	256.8	234.1	486.4	25.6	16.8	168.0
Pennsylvania.....	251	120	16.0	94.7	12.8	25.8	65.4	183.0	167.5	349.6	26.0	9.1	78.2
East North Central....	1,310	680	87.5	519.7	71.1	142.5	366.4	1,013.8	848.6	1,860.8	119.8	55.5	585.0
Ohio.....	348	188	28.9	179.2	23.2	46.9	128.0	355.4	291.2	647.8	44.8	16.5	189.2
Indiana.....	153	78	13.1	75.0	10.6	21.3	52.6	148.0	126.8	273.7	16.1	7.6	72.5
Illinois.....	427	233	26.8	158.8	21.9	44.0	110.1	307.7	238.5	544.7	43.6	19.7	209.4
Michigan.....	264	124	12.7	73.5	10.4	20.5	52.5	133.6	134.5	268.5	9.3	8.1	81.5
Wisconsin.....	118	57	6.0	33.1	4.9	9.7	23.2	69.1	57.6	126.1	6.0	3.6	32.4
West North Central....	299	136	14.7	77.4	11.9	23.2	56.1	161.0	130.3	289.4	18.0	8.4	76.4
Minnesota.....	104	40	3.9	22.1	2.9	5.6	15.2	47.0	30.8	77.1	(D)	2.4	24.7
Missouri.....	110	64	6.0	31.0	5.1	9.8	22.1	62.5	64.2	125.6	7.7	3.5	30.9
Nebraska.....	14	8	0.7	3.6	0.5	1.1	2.3	7.0	5.4	12.5	0.8	(D)	(D)
Kansas.....	32	6	0.7	3.5	0.6	1.1	2.7	8.5	7.5	15.9	1.0	0.4	3.2
South Atlantic.....	360	143	17.6	93.1	14.3	29.1	64.0	233.7	191.6	423.1	29.7	11.5	114.1
Virginia.....	32	15	3.7	19.1	3.0	6.2	13.4	42.0	32.6	73.8	2.6	2.1	19.6
North Carolina.....	63	33	3.1	14.3	2.6	5.2	10.3	33.3	46.5	78.9	3.2	(D)	(D)
South Carolina.....	17	8	2.6	16.2	2.0	4.2	10.3	59.2	32.1	91.0	6.9	1.8	31.3
Georgia.....	43	17	1.5	7.9	1.3	2.7	5.9	31.4	20.3	51.5	7.3	0.6	6.4
Florida.....	145	43	2.8	13.8	2.4	4.8	9.8	28.2	25.8	54.0	(D)	1.1	10.4
East South Central....	107	53	6.8	34.4	5.6	11.6	25.2	119.9	86.6	208.2	12.5	4.7	78.7
Mississippi.....	14	10	1.1	5.6	0.9	2.0	4.3	15.1	18.3	33.3	1.6	0.6	9.9
West South Central....	207	75	8.2	44.4	6.7	13.9	30.1	106.9	94.0	198.8	16.2	4.3	3.2
Texas.....	140	49	5.1	28.9	4.0	8.5	19.2	68.5	62.6	130.2	13.7	3.1	31.9
Mountain.....	99	19	1.4	6.7	1.1	2.0	4.5	13.1	11.8	24.3	1.9	(D)	(D)
Colorado.....	40	7	0.5	2.6	0.5	0.9	2.0	7.2	5.0	11.6	0.9	0.2	1.5
New Mexico.....	7	3	0.2	0.7	0.1	0.2	0.4	1.0	1.2	2.2	(Z)	(D)	(D)
Pacific.....	791	280	22.8	137.5	18.0	41.9	91.7	291.1	238.6	523.9	31.1	(D)	(D)
Oregon.....	36	3	0.3	1.6	0.2	0.4	1.0	2.6	2.6	5.4	(D)	0.2	1.3
California.....	693	263	21.8	131.6	17.2	40.4	87.6	278.8	227.3	500.4	29.4	13.9	142.6

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.

TABLE 3. Value of Shipments by All Producers: 1967 and 1963

(Includes value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Value of shipments including interplant transfers (million dollars)	
		1967	1963
3079- --	MISCELLANEOUS PLASTIC PRODUCTS:		
	As reported in census of manufactures <sup>1</sup> .....	5,766.7	3,494.6
	As reported in Current Industrial Reports MA-30D <sup>2</sup> .....	5,143.3	3,299.8
	Unsupported plastics film, sheets, sheeting, rods, tubes, and other stock shapes:		
	As reported in census of manufactures.....	1,207.5	688.1
30791 --	Made from purchased resins.....	992.4	521.4
28211 --	Made from resins produced in the same establishment.....	215.1	166.7
	As reported in Current Industrial Reports MA-30D.....	1,041.5	672.0
30791 --	Made from purchased resins.....	856.9	505.3
28211 --	Made from resins produced in the same establishment.....	184.6	166.7
	Unsupported film, sheets, and sheeting, total.....	901.5	580.6
	Cellulosic, total.....	69.2	56.8
30791 10	Less than 3.0 mils and not specified by gauge.....	15.8	34.3
30791 11			
28211 1-			
30791 13			
30791 15	3.0 mils to 9.9 mils.....	28.4	11.1
28211 5-			
	10.0 mils and over.....	25.0	11.3
	Polyethylene, total.....	270.5	167.7
30791 21	Less than 3.0 mils.....	200.8	126.2
28211 21			
30791 23			
28211 23			
30791 25	3.0 mils to 9.9 mils.....	54.6	30.8
28211 25			
30791 20	10.0 mils and over.....	5.7	4.3
	Not specified by gauge.....	9.4	6.4
	Polypropylene, total.....	27.7	15.8
30791 31	Less than 3.0 mils.....	21.9	14.7
28211 31			
30791 33-			
35			
	3.0 mils and over.....	5.8	1.2
	Polystyrene, total.....	37.2	18.5
30791 41	Less than 3.0 mils.....	5.3	7.1
28211 41			
30791 43			
30791 45			
28211 45	3.0 mils to 9.9 mils.....	6.5	11.4
	10.0 mils and over.....	25.4	
30791 51	Styrene copolymer, all gauges.....	2.1	2.7
30791 55			
30791 60			
30791 61			
28211 61	Vinyl and vinyl copolymer, total.....	275.8	183.6
30791 63			
28211 63			
30791 65			
28211 65	Less than 3.0 mils and not specified by gauge.....	282.0	39.1
30791 60			
28211 60			
	3.0 mils to 9.9 mils.....	72.3	44.8
	10.0 mils and over.....	13.5	9.6
	Not specified by gauge.....	80.0	67.3
		28.0	7.0
		( <sup>2</sup> )	15.7
	Other unsupported plastic film, sheets, and sheeting, total.....	218.9	135.6
30791 71	Less than 3.0 mils.....	95.4	135.6
28211 71			
30790 73			
28211 73			
30791 75	3.0 mils to 9.9 mils.....	24.8	
28211 75			
	10 mils and over.....	98.7	
	Unsupported plastics rods, tubes, and other stock shapes (excluding foam), total.....	138.0	76.6
30791 81	Acrylate and methacrylate.....	6.7	3.5
30791 83			
28211 83			
30791 85			
30791 87	Cellulosics.....	18.1	9.8
30791 89			
30791 91			
30791 93			
30791 95	Polyamide (nylon).....	8.0	4.9
28211 95			
30791 97			
	Polyethylene.....	6.1	7.1
	Polypropylene.....	17.5	3.2
	Polystyrene.....	6.5	6.3
	Styrene copolymer.....	1.3	1.4
	Vinyl and vinyl copolymer.....	35.7	19.2
	Other unsupported plastics rods, tubes, and other stock shapes.....	38.1	21.2
30791 00	Unsupported plastics film, sheets, sheeting, rods, tubes, and other stock shapes, n.s.k.....	2.0	14.7
28210 0-			

See footnotes at end of table.

TABLE 3. Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Value of shipments including interplant transfers (million dollars)	
		1967	1963
3079- --	MISCELLANEOUS PLASTIC PRODUCTS--Continued		
30792 --	Foamed plastics products, total:		
	As reported in census of manufactures.....	490.0	261.2
	As reported in Current Industrial Reports MA-30D.....	424.5	246.5
30792 11	Mattress cores (uncovered only).....	29.0	8.4
30792 21	Formed and slab stock for pillows, seating, cushioning, etc.....	204.8	127.2
	Insulation:		
30792 33	Pipe.....	2.8	48.9
30792 35	Block.....	9.0	
30792 37	Other foamed insulation.....	34.2	
30792 30	Insulation, not specified by kind.....	6.6	
30792 41	Carpet and rug cushions.....	4.2	51.6
30792 98	Other foamed plastics products.....	116.7	
30792 00	Foamed plastics products, not specified by kind.....	17.3	
30793 --	Laminated sheets, rods, and tubes, total:		
	As reported in census of manufactures.....	351.3	244.1
	As reported in Current Industrial Reports MA-30D.....	331.1	239.5
	High pressure thermosetting:		
30793 11	Decorative sheets.....	177.8	136.8
30793 21	Metal clad sheets.....	47.2	22.1
30793 31	Other sheets.....	38.9	34.8
30793 41	Rods and tubes.....	11.3	9.6
	Low pressure:		
30793 51	Thermosetting sheets.....	20.4	10.6
30793 61	Thermosetting rods and tubes.....	4.5	2.4
30793 71	Thermoplastic sheets, rods, and tubes on materials other than textile or random fiber.....	31.0	14.0
30793 00	Laminated sheets, rods, and tubes, n.s.k.....	-	9.3
30794 --	Packaging and shipping containers, plastics, total:		
	As reported in census of manufactures.....	772.5	441.8
	As reported in Current Industrial Reports MA-30D.....	766.2	440.9
30794 11	Baskets.....	7.5	2.8
30794 21	Open top and trays (except tote boxes).....	21.6	6.9
30794 23	Tote boxes.....	5.4	2.1
30794 27	Boxes and cases with tops.....	54.5	32.3
	Bottles and drums:		
30794 31	Less than 8 fluid ounce bottles and vials.....	48.2	26.2
30794 32	8 to 32 fluid ounce bottles.....	99.2	66.4
30794 33	33 to 64 fluid ounce bottles.....	27.5	20.6
30794 35	65 to 128 fluid ounce bottles.....	37.1	20.1
30794 37	129 to 256 fluid ounce bottles.....	3.6	
30794 41	5 gallons only.....	1.4	0.4
30794 43	Over 2 gallons (except 5 gallons).....	6.1	2.6
30794 40	Not specified by size.....	3.8	-
30794 53	Disposable cups and tumblers (including foamed).....	61.3	26.1
30794 57	Jars and tubs.....	34.6	12.9
30794 67	Foamed protective shipping pads and shaped packaging.....	15.3	8.2
30794 71	Caps and closures.....	184.1	98.1
30794 77	Blister and bubble formed packaging.....	7.7	9.7
30794 51	Cans.....	138.7	1.6
30794 98	Other plastics packaging and related products (including synthetic meat and sausage casings).....		88.2
30794 00	Plastics packaging and shipping containers, n.s.k.....		15.7
30795 --	Industrial plastics products, total:		
	As reported in census of manufactures.....	1,260.3	832.8
	As reported in Current Industrial Reports MA-30D.....	1,253.5	828.2
30795 11	Gears, bearings, bushings, and cams.....	31.9	22.8
	Components, housing, accessories, and parts for--transportation equipment:		
30795 21	Motor vehicles.....	300.8	166.3
30795 23	Aircraft.....	57.4	30.4
30795 25	Missile.....	42.4	56.8
30795 28	Other transportation equipment.....	18.4	13.2
30795 31	Office, computing, accounting machines, cash register, data processing machines, etc.....	45.3	19.9
	Household and commercial appliances:		
30795 41	Air conditioners.....	14.5	7.3
30795 43	Refrigerators and freezers.....	59.1	45.1
30795 45	Other major appliances.....	57.8	45.7
30795 47	Small appliances.....	51.7	41.1
30795 51	Other electrical and electronic equipment, including wiring devices.....	193.7	137.5
30795 68	Other components, housings, accessories, and parts.....	101.9	77.6
30795 98	Other industrial plastics products.....	145.5	76.1
30795 00	Industrial plastics products, n.s.k.....	133.0	88.4

See footnotes at end of table.



TABLE 3. Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Value of shipments including interplant transfers (million dollars)	
		1967	1963
3079- --	MISCELLANEOUS PLASTIC PRODUCTS--Continued		
30796 --	Construction plastics products, total:		
	As reported in census of manufactures.....	420.1	283.8
	As reported in Current Industrial Report MA-30D.....	391.5	280.6
30796 11	Corrugated and flat panels.....	56.6	40.8
30796 21	Doors and partitions, folding accordian type.....	16.2	19.1
	Unsupported plastics floor, wall, and counter covering:		
30796 31	Sheet goods.....	13.8	11.4
30796 35	Floor tile.....	39.2	45.2
30796 37	Wall tile.....	10.9	9.9
30796 51	Plumbing fixtures and parts (excluding pipe and fittings).....	19.1	13.6
	Pipe:		
30796 53	1/2 to less than 2 inches, inside diameter.....	43.7	32.5
30796 55	2 inches and over inside diameter.....	51.4	16.8
30796 54	Not specified by size.....	11.1	8.4
30796 57	Fittings and unions.....	51.3	21.4
30796 61	Insect screening.....	1.0	(NA)
30796 98	Other construction plastics products.....	77.0	60.7
30796 00	Construction plastics products, n.s.k.....	0.3	0.9
30797 --	Plastics dinnerware, tableware and kitchenware, total:		
	As reported in census of manufactures.....	205.1	147.6
	As reported in Current Industrial Reports MA-30D.....	176.4	144.8
30797 13	Plastics dinnerware and kitchenware (for serving food and drink).....	91.3	89.5
30797 15	Plastics kitchenware (for storing food and drink).....		
30797 00	Plastics dinnerware, tableware and kitchenware, n.s.k.....	85.1	55.4
30798 --	Consumer and commercial plastics products, n.e.c., total:		
	As reported in census of manufactures.....	658.7	457.1
	As reported in Current Industrial Reports MA-30D.....	550.9	333.4
30798 11	Utility containers.....	69.2	40.4
30798 21	Flower pots, flower boxes, and planters.....	10.8	11.4
	Footwear and shoe products:		
30798 41	Shoe products.....	55.2	33.7
30798 31	Arctics and gaiters.....	17.5	
30798 51	Other footwear.....	9.3	10.5
30798 61	Garden hose.....	27.7	23.1
30798 63	Other hose.....	19.8	10.0
30798 65	Tubing (under 1/2 inch inside diameter).....	11.6	9.2
30798 71	Hardware.....	13.4	9.5
30798 73	Picnic jugs, cooler chests, and ice buckets (including foamed).....	23.5	11.7
30798 75	Clotheslines.....		1.9
30798 98	Other consumer and commercial plastics products, n.e.c.....	263.9	152.3
30798 00	Other consumer and commercial plastics products, n.e.c., n.s.k.....	29.2	19.7
	Miscellaneous plastics products, n.s.k.:		
	As reported in census of manufactures:		
30790 00	Miscellaneous plastic products, n.s.k. (For companies with 10 or more employees. See Note.)..	320.4	
30790 02	Miscellaneous plastic products, n.s.k. (For companies with less than 10 employees. See Note.).....	80.8	138.1
	As reported in Current Industrial Reports MA-30D.....	207.6	113.9

- Represents zero. (NA) Not available. n.e.c. Not elsewhere classified. n.s.k. Not specified by kind.

<sup>1</sup>The difference between the value of shipments reported in the census of manufactures and the value reported in the Current Industrial Reports Series MA-30D is accounted for in part by plastics products reported in the census of manufactures as products of industry 3079, Miscellaneous Plastic Products, without sufficient description to recode properly into a more correct product code in other industries and by new producers reporting in the census of manufactures but not included in the Current Industrial Reports.

<sup>2</sup>To avoid disclosing figures for individual companies, "less than 3.0 mils" and "not specified by gauge" were shown as a combined figure for 1967, although it was possible to show separate data for 1963.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3079.--MISCELLANEOUS PLASTICS PRODUCTS					
	Materials, containers, supplies, total.....		(X)	2,272.3	(X)	1,380.5
282130	Thermoplastic resins including modified resins.....	Million lbs.....	3,838.6	816.4	2,143.5	503.3
282140	Thermosetting resins.....	..do.....	876.4	255.6	485.2	157.8
307911	Unsupported plastics film and sheeting.....	..do.....	184.1	74.5	(NA)	43.3
307912	Plastics rods, tubes, and other shapes.....	..do.....	(S)	28.5	(NA)	24.7
281835	Plasticizers.....	..do.....	142.7	29.0	90.9	17.9
322931	Glass fiber, roving, mats, etc.....	..do.....	56.1	28.4	38.4	19.6
220234	Cotton fabrics.....	Million lin. yds..	59.8	20.4	37.6	13.9
220239	Other textile fabrics.....	..do.....	(S)	18.9	(NA)	15.9
970099	All other materials, and components, parts, containers, and supplies consumed.....		(X)	621.3	(X)	382.3
976000	Materials, containers, supplies, n.s.k. <sup>1</sup> .....		(X)	379.3	(X)	201.8

(NA) Not available. n.s.k. Not specified by kind. (S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review. (X) Not applicable.

<sup>1</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3079, these small establishments accounted for approximately 1.4 percent of payrolls and 1.5 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

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A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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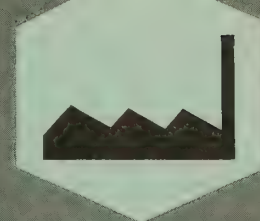








# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

### Leather tanning and finishing

SIC Code 3111

**preliminary  
report**

The Leather Tanning and Finishing Industry includes establishments primarily engaged in tanning, currying, and finishing hides and skins into leather. This industry also includes leather converters, who buy hides and skins and have them processed into leather on a contract basis by others.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Leather Tanning and Finishing Industry amounted to \$869.5 million, an increase of 14.6 percent compared with 1963. Value added by

manufacture at \$319.3 million in 1967 was 16.8 percent more than value added in 1963. Average employment in the industry showed a decrease of 2.3 percent from 1963 to a total of 30.7 thousand employees in 1967.

Of the \$869.5 million total value of shipments and other receipts of establishments classified as leather tanners and finishers, \$12.8 million were products primary to other industries; and \$133.4 million were receipts for miscellaneous activities. The industry shipments of primary products represented 98 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 99 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)
INDUSTRY 3111.--LEATHER TANNING AND FINISHING														
1967 Census....	<sup>3</sup> 520	258	30.7	186.4	26.4	52.8	142.5	319.3	546.4	869.5	16.8	135.7	98	99
1966 ASM <sup>1</sup> .....	(NA)	(NA)	32.7	189.2	28.2	57.5	144.4	326.4	614.1	940.5	17.3	144.4	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	32.0	180.0	27.9	56.9	139.0	327.0	535.6	856.7	11.3	144.2	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	31.2	169.0	27.1	54.6	131.5	300.2	481.3	783.6	*7.8	137.7	(NA)	(NA)
1963 Census....	525	256	31.4	163.3	27.3	54.6	129.8	273.1	480.5	758.4	6.5	140.3	99	100
1962 ASM <sup>1</sup> .....	(NA)	(NA)	31.7	157.2	27.3	53.3	123.1	263.6	491.0	765.9	*7.2	146.8	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	33.2	157.9	28.7	55.0	124.0	267.5	486.7	761.1	4.7	154.1	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	34.5	163.9	30.0	57.6	128.9	278.5	508.5	790.7	6.1	149.3	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	37.1	173.6	32.4	62.6	137.1	337.5	558.9	886.9	7.6	160.1	(NA)	(NA)
1958 Census <sup>2</sup> ...	578	280	37.1	165.5	32.5	63.4	133.2	275.8	464.9	743.1	7.9	149.3	100	100

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 2 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

<sup>3</sup>Some of the small establishments in this industry may have been misclassified as to industry. This does not significantly affect the statistics other than the number of establishments. (See section of text on scope and coverage for further explanation.)

Issued September 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**BUREAU OF THE CENSUS George Hay Brown, Director**

The total value of tanned and finished leather shipped by all producers in 1967 was \$729.6 million of which \$723.3 million, or 99 percent, were shipped by plants classified in industry 3111, Leather Tanning and Finishing, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 100 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)						
INDUSTRY 3111.--LEATHER TANNING AND FINISHING													
United States, total.....	1520	258	30.7	186.4	26.4	52.8	142.5	319.3	546.4	869.5	16.8	31.4	273.1
New England.....	183	93	9.7	57.4	8.1	16.1	42.4	95.0	172.0	268.8	3.8	10.0	81.8
Maine.....	16	14	2.1	11.9	1.9	3.8	9.4	20.8	22.3	42.9	0.6	(D)	(D)
Massachusetts.....	146	62	5.9	36.7	4.9	9.4	26.1	60.6	133.4	196.7	2.0	6.0	55.1
Middle Atlantic.....	176	68	6.7	40.4	5.8	11.5	31.0	72.2	116.6	189.6	2.1	8.2	70.0
New York.....	107	30	2.5	14.9	2.2	4.3	11.8	25.6	45.8	73.1	0.7	3.2	28.3
New Jersey.....	49	25	2.3	14.6	1.9	3.9	10.4	27.7	38.0	66.4	0.9	2.2	22.2
Pennsylvania.....	20	13	1.9	10.9	1.7	3.2	8.9	18.9	32.7	50.1	0.5	2.7	19.6
East North Central...	75	52	8.5	56.8	7.3	15.0	43.9	95.2	147.0	243.1	(D)	7.7	78.6
Illinois.....	20	13	1.9	13.1	1.7	3.7	10.7	25.7	32.8	58.0	1.1	2.0	19.6
Wisconsin.....	30	24	4.5	31.5	3.7	7.7	23.0	51.4	77.4	129.5	3.1	4.0	44.4
West North Central...	14	7	0.7	5.2	0.6	1.3	3.8	9.1	13.8	23.1	(D)	0.6	6.2
South Atlantic.....	25	17	2.8	14.0	2.5	4.8	11.4	22.8	42.1	65.0	1.6	(D)	(D)
East South Central...	12	10	1.4	6.7	1.2	2.6	5.3	14.7	41.9	56.9	1.2	(D)	(D)
West South Central...	9	2	0.1	0.8	0.1	0.3	0.5	1.2	0.6	2.0	(Z)	(D)	(D)
West.....	26	9	0.8	5.1	0.7	1.3	4.0	9.1	12.4	21.1	0.6	0.6	5.1
California.....	15	8	0.7	4.7	0.6	1.2	3.7	8.4	11.5	19.5	(D)	0.6	4.4

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.

<sup>1</sup>Some of the small establishments in this industry may have been misclassified as to industry. This does not significantly affect the statistics other than the number of establishments. (See section of text on scope and coverage for further explanation.)

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3111- --	TANNED AND FINISHED LEATHER, TOTAL.....		(X)	729.6	(X)	635.8
31111 --	Finished cattle hide and kip side leathers, total.....		(X)	487.3	(X)	397.4
	Grains, except offal and welting leather (heads, shoulders, bellies, etc.):					
	Sole leather:					
31111 11	Vegetable tanned (backs, bends, and sides).....	Million lbs...	129.7	71.8	91.9	46.3
31111 13	Chrome or retan (backs, bends, and sides).....	Million sq.ft.	22.0	11.5	12.7	6.2
31111 24	Belting and mechanical leather.....	Million lbs...	5.3	5.0	9.0	7.4
31111 33	Bag, case, and strap leather (sides).....	Million sq.ft.	39.3	21.7	40.9	19.2
31111 35	Upholstery leather, top grains and machine buffs (hides).....	..do.....	29.2	18.9	38.8	18.6
31111 37	Upper leather, excluding patent (sides).....	..do.....	527.8	256.5	509.4	216.3
31111 41	Patent leather (sides).....	..do.....	20.9	13.5	28.5	18.3
31111 45	Garment leather (sides).....	..do.....	8.0	3.7	9.4	3.6
31111 49	Other grains, including flat and handbag leather, and lining leather (sides).....	..do.....	46.6	19.5	40.6	15.6
	Offal (heads, shoulders, bellies, etc.) except splits and welting leather:					
	Sole leather:					
31111 51	Vegetable tanned.....	Million lbs...	37.1	14.9	31.7	8.5
31111 53	Chrome or retan.....	Million sq.ft.	15.3	4.3	21.8	5.2
31111 59	Other offal, including waistbelt leather.....	..do.....	8.4	4.8	8.2	3.6
	Finished splits, including shoulder splits, deep buffs, buffing and fleshers:					
31111 61	Bottom stock.....	Million sq.ft.	17.6	3.9	4.2	1.0
31111 63	Upper.....	..do.....	55.1	13.2	32.5	6.7
31111 65	Lining.....	..do.....	76.5	12.4	67.8	11.2
31111 69	Other including glove and upholstery.....	..do.....	31.1	7.4	43.0	6.5
31111 71	Welting leather grains and offal.....	Million lbs...	3.8	2.4	4.0	1.1
31111 00	Finished cattle hide and kip side leathers, n.s.k.....		(X)	1.9	(X)	2.1
31112 11	Finished calf and whole kip leathers.....	Million sq.ft.	44.3	35.6	69.9	51.9
31113 --	Finished sheep and lamb leather, total.....	..do.....	167.9	60.8	234.2	69.7
31113 12	Shoe.....	..do.....	31.1	9.8	76.4	19.2
31113 31	Garment.....	..do.....	99.9	37.3	113.3	35.5
31113 39	Other, including glove, fleshers, and skivers.....	..do.....	26.1	7.9	41.6	14.1
31113 51	Shearlings.....	..do.....	10.8	5.8	2.9	0.9
31113 00	Finished sheep and lamb leather, n.s.k.....	..do.....	-	-	-	-
31114 --	Other finished leathers, n.e.c., total.....	..do.....	147.9	78.4	130.3	69.4
	Goat and kid leathers:					
31114 11	Upper.....	..do.....	62.6	38.1	68.4	38.5
31114 19	Lining and other.....	..do.....	11.0	6.0	10.4	4.3
31114 21	All cabretta leathers.....	..do.....	10.4	6.5	6.7	3.0
31114 35	Horse, colt, mule, ass, and pony leathers.....	..do.....	59.4	25.4	33.2	15.6
31114 59	Other animal leathers.....	..do.....	4.5	2.4	3.3	1.7
31114 00	Other finished leathers, n.e.c., n.s.k.....	..do.....	-	-	-	-
31115 --	Rough, russet, and crust leather (not finished in the same establishment), total.....		(X)	30.5	(X)	23.4
31115 21	Grains and offal (heads, shoulders, bellies, etc.).....		(X)	15.7	(X)	10.7
31115 51	Splits, including shoulder splits, deep buffs, buffing, and fleshers.....		(X)	14.8	(X)	12.7
31110 00	All other finished and rough leathers, n.s.k. (For companies with 10 or more employees. See Note.).....		(X)	27.3		
31110 02	All other finished and rough leathers, n.s.k. (For companies with less than 10 employees. See Note.).....		(X)	9.7	(X)	23.9
31119 11	Receipts for contract finishing and tanning done for others on their materials.....		(NA)	116.9	(NA)	99.1

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

- Represents zero. <sup>e</sup>From 10 to 30 percent of this figure was estimated. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Combined to avoid disclosing operations of individual companies.



## 1967 CENSUS OF MANUFACTURES

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation Terms")

Code	Material	Unit of measure	1967		1963		
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)	
	INDUSTRY 3111.--LEATHER TANNING AND FINISHING						
	Materials, parts, supplies, total.....		(X)	462.1	(X)	397.6	
201191	Hides, skins, and pelts.....		(X)	298.0	(X)	274.3	
240011	Plywood and other wood products, except boxes and containers....		(X)	0.4	(NA)	(NA)	
280021	Tanning materials, dressings, dyes, and finishing agents.....		(X)	92.4	(X)	87.4	
	Finished leather:						
311102	Upper leather.....	Million sq. ft...	28.1	9.3	}	(NA)	
311105	Innersole leather.....	do.....	122.9	112.0			
311106	All other soling leather.....	do.....					
311108	All other finished leather.....	do.....					
970099	All other materials, containers, and supplies.....		(X)	21.2	(X)	19.0	
972000	Materials, parts, supplies, n.s.k.....		(X)	28.8	(X)	16.9	

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

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### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3111, these small establishments accounted for approximately 1 percent of payrolls and 1.5 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

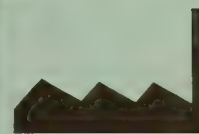
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-31A-2

## INDUSTRY SERIES

### Industrial leather belting and packing

SIC Code 3121

**preliminary  
report**

The Industrial Leather Belting and Packing Industry includes establishments primarily engaged in manufacturing industrial leather products, such as transmission belting, mechanical packings, and textile leathers. Establishments primarily engaged in manufacturing leather gaskets are classified in industry 3293.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Industrial Leather Belting and Packing Industry amounted to \$53.8 million, an increase of 3.6 percent compared with 1963. Value added by

manufacture at \$31.5 million in 1967 was 4.2 percent less than value added in 1963. Average employment in the industry showed a decrease of 6.7 percent from 1963 to a total of 2.7 thousand employees in 1967.

Of the \$53.8 million total value of shipments and other receipts of establishments classified as industrial leather belting and packing, \$7.8 million were products primary to other industries; and \$6.2 million were receipts for miscellaneous activities. The industry shipments of primary products represented 84 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 89 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3121.--INDUSTRIAL LEATHER BELTING AND PACKING														
1967 Census....	267	24	2.7	15.9	2.0	4.0	10.4	31.5	21.5	53.8	1.1	7.6	84	93
1966 ASM <sup>1</sup> .....	(NA)	(NA)	2.6	16.0	1.9	4.0	10.7	33.8	20.0	53.1	0.6	8.2	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	2.7	16.5	1.9	4.0	10.6	33.0	20.3	52.4	0.9	8.3	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	2.9	17.1	2.2	4.4	9.8	31.7	20.9	52.9	0.9	7.8	(NA)	(NA)
1963 Census....	83	23	2.9	15.9	2.1	4.2	9.7	32.9	19.0	51.9	0.7	7.7	89	84
1962 ASM <sup>1</sup> .....	(NA)	(NA)	3.6	19.6	2.5	4.7	11.7	50.0	29.5	79.3	0.3	15.6	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	4.7	21.0	3.6	5.5	12.0	43.9	23.5	66.5	1.5	15.3	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	6.7	26.2	5.1	9.2	16.9	52.0	29.7	81.0	2.3	14.6	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	5.6	25.5	4.2	8.7	16.6	46.9	41.3	88.0	1.9	14.1	(NA)	(NA)
1958 Census <sup>2</sup> ....	104	32	4.0	18.7	2.8	5.4	11.5	36.3	30.4	66.6	1.2	13.1	97	92

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 2 and 7, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

<sup>3</sup>Some of the small establishments in this industry may have been misclassified as to industry. This does not significantly affect the statistics other than the number of establishments. (See section of text on scope and coverage for further explanation.)

Issued September 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary  
Rocco C. Siciliano, Under Secretary  
**BUREAU OF THE CENSUS**



The total value of industrial leather belting and packing shipped by all producers in 1967 was \$42.9 million of which \$39.9 million, or 93 percent, were shipped by plants classified in industry 3121, Industrial Leather Belting and Packing, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 84 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3121.--INDUSTRIAL LEATHER BELTING AND PACKING													
United States, total.....	167	24	2.7	15.9	2.0	4.0	10.4	31.5	21.5	53.8	1.1	2.9	32.9
Northeast.....	24	9	0.7	4.1	0.5	1.0	2.5	7.6	7.1	14.8	0.2	0.8	7.9

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

\*Some of the small establishments in this industry may have been misclassified as to industry. This does not significantly affect the statistics other than the number of establishments. (See section of text on scope and coverage for further explanation.)

TABLE 3. Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Value (million dollars)	
		1967	1963
3121- --	INDUSTRIAL LEATHER BELTING AND PACKING, TOTAL.....	42.9	50.6
31210 13	Industrial leather belting.....	6.8	8.5
	Leather packings, oil and grease retainers, total.....	24.5	33.8
31210 61	Leather packings.....	24.5	7.6
31210 71	Leather oil and grease retainers, including seals.....		26.1
31210 98	Other industrial leather products made wholly or partly of leather, including textile leathers but excluding gaskets and washers.....	6.7	8.3
31210 00	Industrial leather belting and packing, n.s.k. (For companies with 10 or more employees. See Note)	2.6	-
31210 02	Industrial leather belting and packing, n.s.k. (For companies with less than 10 employees. See Note).....	2.3	

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

- Represents zero. n.s.k. Not specified by kind.

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TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3121.--INDUSTRIAL LEATHER BELTING AND PACKING					
	Materials, parts, supplies, total.....		(X)	18.3	(X)	15.6
201191	Hides, skins, and pelts.....		(X)	3.8	(X)	(NA)
	Finished leather:					
311102	Upper leather.....	million sq. ft....	1.4	0.8	15.2	5.9
311106	Soling leather, except innersole.....	million lbs.....	2.8	3.2		
311108	All other finished leather.....	do.....				
970099	All other materials, parts, and supplies.....		(X)	8.0	(X)	7.7
976000	Materials, parts, supplies, n.s.k.....		(X)	2.5	(X)	2.0

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<sup>1</sup>For 1963, figures are in million pounds.

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**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

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A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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**U. S. DEPARTMENT OF COMMERCE**  
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**BUREAU OF THE CENSUS**

**WASHINGTON, D.C. 20233**

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# 1967 CENSUS OF MANUFACTURES



MC67(P)-31A-3

## INDUSTRY SERIES

**preliminary  
report**

### Footwear cut stock

SIC Code 3131

The Boot and Shoe Cut Stock and Findings Industry includes establishments primarily engaged in manufacturing leather soles, innersoles, and other boot and shoe cut stock and findings. This industry also includes finished wood heels. Establishments primarily engaged in manufacturing heels, soling strips, and soles made of rubber, composition, plastics, and fiber are classified in Major Group 30.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Footwear Cut Stock Industry amounted

to \$263.2 million, an increase of 14.8 percent compared with 1963. Value added by manufacture at \$110.8 million in 1967 was 22.2 percent more than value added in 1963. Average employment in the industry showed a decrease of 3.7 percent from 1963 to a total of 13.8 thousand employees in 1967.

Of the \$263.2 million total value of shipments and other receipts of establishments classified as footwear cut stock, \$16.8 million were products primary to other industries; and \$9.3 million were receipts for miscellaneous activities. The industry shipments of primary products represented 93 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was also 93 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)
INDUSTRY 3131.—FOOTWEAR CUT STOCK														
1967 Census....	<sup>3</sup> 381	191	13.8	60.0	12.3	23.1	46.0	110.8	152.2	263.2	2.4	25.1	93	93
1966 ASM <sup>1</sup> .....	(NA)	(NA)	14.5	65.2	12.4	24.2	47.3	104.4	178.9	282.8	*3.1	25.8	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	14.5	61.4	12.7	24.8	45.4	98.0	153.9	250.4	2.3	23.5	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	13.8	52.7	12.1	23.2	37.4	97.4	125.7	223.8	1.2	22.1	(NA)	(NA)
1963 Census....	446	204	14.3	53.4	12.6	23.7	40.9	90.6	138.2	229.3	1.6	23.0	93	94
1962 ASM <sup>1</sup> .....	(NA)	(NA)	17.4	61.1	15.3	29.3	48.8	111.6	149.2	261.5	*0.9	26.4	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	19.7	66.7	17.3	32.3	53.0	112.0	160.1	272.5	(S)	26.6	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	20.1	68.8	17.6	33.5	54.0	113.2	174.4	288.0	(S)	27.7	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	20.3	68.3	17.9	33.4	53.9	116.9	180.5	296.9	(S)	28.5	(NA)	(NA)
1958 Census <sup>2</sup> ...	513	235	18.0	58.5	15.5	28.9	44.6	98.4	158.6	256.7	2.0	26.2	95	95

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

(S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 10 and 7, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

<sup>3</sup>Some of the small establishments in this industry may have been misclassified as to industry. This does not significantly affect the statistics other than the number of establishments. (See section of text on scope and coverage for further explanation.)

Issued September 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary  
Rocco C. Siciliano, Under Secretary  
**BUREAU OF THE CENSUS**

The total value of footwear cut stock shipped by all producers in 1967 was \$254.3 million of which \$237.1 million, or 93 percent, were shipped by plants classified in industry 3131, Footwear Cut Stock, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 94 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967										1963		
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more (number)	Number	Payroll (million dollars)	Number	Man-hours	Wages						
	(number)		(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
	INDUSTRY 3131.—FOOTWEAR CUT STOCK												
United States, total.....	1381	191	13.8	60.0	12.3	23.1	46.0	110.8	152.2	263.2	2.4	14.3	90.6
New England.....	210	114	7.7	34.5	6.7	12.6	25.3	63.0	77.7	140.6	1.3	7.9	50.9
Massachusetts.....	156	84	5.3	24.8	4.6	8.7	18.0	47.2	60.4	107.5	0.9	5.4	36.5
Middle Atlantic.....	85	34	2.1	8.8	1.8	3.5	6.7	16.0	26.2	42.3	0.1	2.2	12.4
New York.....	64	23	1.4	6.2	1.2	2.3	4.7	11.8	18.1	30.1	0.1	1.4	8.5
East North Central....	25	9	0.8	3.4	0.7	1.5	2.9	5.6	8.4	14.0	0.2	0.9	5.2
Illinois.....	8	4	0.3	1.3	0.3	0.6	1.1	2.2	3.2	5.5	(D)	0.3	1.6
West North Central....	38	23	2.3	9.1	2.1	3.8	7.4	17.8	29.1	47.0	0.5	2.5	17.0
South.....	15	8	0.9	3.4	0.8	1.5	2.9	6.6	10.2	17.0	0.2	(D)	(D)
Tennessee.....	5	5	0.6	2.4	0.6	1.1	2.2	5.1	6.8	11.9	(D)	(D)	(D)
Pacific.....	8	3	0.2	0.8	0.2	0.3	0.7	1.7	0.7	2.4	0.1	0.2	0.9

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

<sup>1</sup>Some of the small establishments in this industry may have been misclassified as to industry. This does not significantly affect the statistics other than the number of establishments. (See section of text on scope and coverage for further explanation).



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	1967				1963										
			Total shipments including interplant transfers		Transfers to other plants of the same company		Total shipments including interplant transfers		Transfers to other plants of the same company								
			Quantity	Value (million dollars)	Quantity	Value (million dollars)	Quantity	Value (million dollars)	Quantity	Value (million dollars)							
3131- --	FOOTWEAR CUT STOCK, TOTAL.....		(X)	254.3	(X)	40.0	(X)	216.0	(X)	35.4							
	Boot and shoe cut stock:																
	Outer soles:																
31310 11	Leather.....	Million doz. prs.	e 6.9	45.0	{	e 1.8	13.9	{	6.6	35.0	1.7	11.7					
31310 15	Other, except rubber, elastomer resin, and plastic.....	do.															
	Innersoles:																
31310 17	Leather.....	do.	(NA)	17.6	(NA)	5.8	2.9	9.4	{	4.5	7.1						
31310 18	Other.....	do.	(NA)	17.1	3.0	4.1	16.9	14.3									
	Heels:																
31310 21	Leather.....	do.	(NA)	5.6	{	0.8	1.2	{	8.6	12.6	{	1.3	2.1				
31310 23	Other, except wood, rubber, elastomer resin, and plastic.....	do.	4.7	9.3										5.0	7.0		
31310 29	Counters.....	do.	e 20.3	13.4	{	6.4	2.6	{	28.2	14.1	{	4.0	1.9				
31310 41	Box toes.....	do.	15.4	4.6										27.8	8.0	6.6	1.8
31310 45	Taps.....	do.	0.9	4.7										0.8	3.3		
	Other cut stock:																
31310 48	Leather.....		(X)	7.6	{	(X)	2.1	{	(X)	5.0	(X)	0.4					
31310 49	Other.....		(X)	16.1									(X)	10.8	(X)	0.2	
	Findings, boot and shoe:																
31310 63	Wood heel blocks, made for sale as such.....	Million doz. prs.	1.4	2.1	-	-	2.0	3.9	{	(NA)	7.7						
	Finished wood heels:																
31310 65	Manufactured complete in your plant.....	do.	2.7	8.1	{	(NA)	10.3	{				3.1	9.6				
31310 66	Finished from purchased blocks.....	do.	e 3.5	14.8										3.5	14.0		
31310 67	Shanks.....	do.	(NA)	6.3	{	(NA)	10.3	{	23.0	6.4	{	(X)	2.4				
31310 68	Welting (equivalent 1/2-inch wide).....	Million lin. yds.	e 121.7	14.5										109.2	9.6		
31310 69	Other findings.....		(X)	35.0			(X)	38.5									
31310 00	Footwear cut stock, n.s.k. (For companies with 10 or more employees. See Note.).....		(X)	25.8	(X)	(X)	{	(X)	14.2	(X)	(X)						
31310 02	Footwear cut stock, n.s.k. (For companies with less than 10 employees. See Note.).....		(X)	6.7	(X)	(X)											

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

- Represents zero.      eFrom 10 to 30 percent of this figure was estimated.      (NA) Not available.      (X) Not applicable.

1967 CENSUS OF MANUFACTURES  
TABLE 4. **Materials Consumed, by Kind: 1967 and 1963**

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3131—FOOTWEAR CUT STOCK					
	Materials, parts, supplies, total.....		(X)	145.1	(X)	129.0
201191	Hides, skins, and pelts.....		(X)	6.3	(NA)	(NA)
	Finished leather:					
311102	Upper leather.....	Million sq. ft...	8.3	4.8	9.5	3.2
	Soling leather, total.....	...do.....	58.4	29.0	81.0	36.2
311105	Innersole leather.....	Million lbs.....	11.7	3.9	16.7	5.5
311106	All other soling leather.....	...do.....	46.7	25.1	64.3	30.8
311108	All other finished leather.....	...do.....	7.2	4.1	13.9	6.9
280021	Tanning materials, dressings, dyes, and other finishing agents...		(X)	2.7	(NA)	(NA)
240011	Plywood and other wood products, except boxes and containers.....		(X)	5.6	(X)	9.0
970099	All other materials, containers, and supplies consumed.....		(X)	57.6	(X)	53.7
976000	Materials, containers, supplies, n.s.k. ....		(X)	35.0	(X)	20.0

(NA) Not available.      n.s.k. Not specified by kind.      (X) Not applicable.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3131, these small establishments accounted for approximately 2.3 percent of payrolls and 2.0 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products**--In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

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These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

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**U.S. DEPARTMENT OF COMMERCE**  
**BUREAU OF THE CENSUS**  
**WASHINGTON, D.C. 20233**

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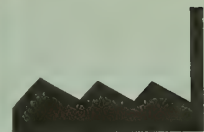
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# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

**preliminary  
report**

### Shoes, except rubber

SIC Code 3141

The Footwear, Except House Slippers and Rubber Footwear Industry includes establishments primarily engaged in the production of boots and shoes designed primarily for street, work, play, or sport wear. Establishments primarily engaged in the production of such protective footwear as rubbers, rubber boots, storm shoes, galoshes, and other footwear with rubber soles vulcanized to the uppers are classified in industry 3021.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Shoes, Except Rubber, Industry amounted to \$2,797.1 million, an increase of 24.3

percent compared with 1963. Value added by manufacture at \$1,548.1 million in 1967 was 27.4 percent more than value added in 1963. Average employment in the industry showed a decrease of 0.8 percent from 1963 to a total of 200.1 thousand employees in 1967.

Of the \$2,797.1 million total value of shipments and other receipts of establishments classified as shoe, except rubber, producers, \$25.3 million were products primary to other industries; and \$125.1 million were receipts for miscellaneous activities. The industry shipments of primary products represented 99 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 99 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
INDUSTRY 3141.--SHOES, EXCEPT RUBBER														
1967 Census....	959	748	200.1	839.2	181.3	336.1	684.6	1,548.1	1,246.3	2,797.1	23.1	338.4	99	98
1966 ASM <sup>1</sup> .....	(NA)	(NA)	206.0	817.6	186.8	348.8	671.6	1,446.1	1,229.3	2,650.1	27.3	344.9	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	205.3	780.8	186.3	346.4	639.3	1,343.3	1,125.7	2,461.3	21.8	301.6	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	201.4	750.9	182.9	342.4	620.9	1,319.9	1,069.8	2,365.9	20.3	286.3	(NA)	(NA)
1963 Census....	1,040	815	201.7	713.6	182.9	335.0	589.4	1,214.7	1,035.6	2,249.2	18.5	268.5	99	99
1962 ASM <sup>1</sup> .....	(NA)	(NA)	215.8	742.2	195.4	356.5	609.4	1,216.0	1,095.4	2,312.3	17.7	278.3	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	216.4	718.3	195.2	352.1	584.8	1,177.8	1,050.4	2,233.1	21.3	270.2	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	216.3	704.7	195.0	352.5	575.1	1,161.1	1,050.8	2,212.7	15.2	263.0	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	219.7	717.0	198.9	366.3	588.8	1,185.0	1,101.0	2,279.6	13.8	280.4	(NA)	(NA)
1958 Census <sup>2</sup> ...	1,115	887	215.3	662.4	194.3	348.5	542.2	1,086.3	964.3	2,048.9	14.5	246.8	99	99

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary  
**Rocco C. Siciliano**, Under Secretary  
**BUREAU OF THE CENSUS** George Hay Brown, Director

The total value of shoes, except rubber, shipped by all producers in 1967 was \$2,689.6 million of which \$2,646.7 million, or 98 percent, were shipped by plants classified in industry 3141, Shoes, Except Rubber, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 99 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

#### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3141, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA31A, Shoes and Slippers.

The detailed data as collected on this survey, however, represents quantity of production whereas the data as collected in the census of manufactures represents quantity of shipments. Therefore, these two sets of data are not completely comparable.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3141.--SHOES, EXCEPT RUBBER												
United States, total.....	959	748	200.1	839.2	181.3	336.1	684.6	1,548.1	1,246.3	2,797.1	23.1	201.7	1,214.7
New England....	290	248	71.3	313.3	63.8	115.9	248.6	500.6	406.8	901.9	6.7	71.0	386.2
Massachusetts.....	136	112	28.4	131.4	25.1	45.6	101.9	209.4	171.9	380.8	2.4	31.1	179.3
Middle Atlantic.....	260	178	35.8	151.3	32.5	61.3	124.0	249.1	217.4	466.2	4.3	39.1	209.2
New York.....	126	70	11.9	55.9	10.6	19.9	43.7	97.9	76.0	171.6	1.4	14.0	81.5
East North Central....	107	92	27.0	119.3	24.0	44.2	94.4	254.1	186.9	447.7	(D)	30.8	221.8
South.....	157	129	42.1	160.6	39.1	74.4	137.9	332.2	270.7	604.0	(D)	35.3	220.4
South Atlantic.....	58	49	13.2	50.6	12.2	23.8	42.6	90.9	83.4	173.1	2.2	10.0	55.1
Mountain.....	7	3	0.1	0.5	0.1	0.2	0.4	0.9	0.7	1.6	(Z)	(D)	(D)
West:	43	19	2.4	11.2	2.1	3.9	8.1	19.4	13.8	32.9	0.2		
Hawaii.....	8	2	0.1	0.3	0.1	0.1	0.2	0.4	0.3	0.8	(D)	0.1	0.6

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

- (D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.  
 (2) Less than \$50 thousand.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (million pairs)	Value (million dollars)	Quantity (million pairs)	Value (million dollars)
3141- --	SHOES, EXCEPT RUBBER, TOTAL.....	509.6	2,689.6	524.2	2,196.7
	Men's dress shoes, including play shoes:				
31411 01	As reported in the census of manufactures.....	87.0	669.4	83.8	531.0
	As reported on Census annual Form MA31A <sup>1</sup> .....	85.0	(NA)	82.5	(NA)
	Men's workshoes:				
31412 10	As reported in the census of manufactures.....	36.1	385.0	26.7	174.9
	As reported on Census annual Form MA31A.....	38.7	(NA)	28.2	(NA)
	Youths' and boys' shoes:				
31413 07	As reported in the census of manufactures.....	25.2	99.5	22.2	82.2
	As reported on Census annual Form MA31A.....	25.3	(NA)	24.0	(NA)
	Women's dress, work, and play shoes:				
31414 10	As reported in the census of manufactures.....	258.4	1,203.8	275.7	1,065.5
	As reported on Census annual Form MA31A.....	258.0	(NA)	275.2	(NA)
	Misses' and children's shoes:				
31415 10	As reported in the census of manufactures.....	57.5	184.5	65.5	189.9
	As reported on Census annual Form MA31A.....	58.3	(NA)	66.2	(NA)
	Infants' and babies' shoes:				
31416 01	As reported in the census of manufactures.....	29.1	69.0	31.7	73.1
	As reported on Census annual Form MA31A.....	30.0	(NA)	33.5	(NA)
	Other footwear (except rubber footwear, shoes with skates attached as slippers):				
31417 10	As reported in the census of manufactures.....	9.2	40.4	12.5	54.4
	As reported on Census annual Form MA31A.....	8.9	(NA)	17.0	(NA)
31410 00	Footwear, n.s.k. (For companies with 10 or more employees. See Note)....	<sup>2</sup> 6.1	32.7	6.1	25.7
31410 02	Footwear, n.s.k. (For companies with less than 10 employees. See Note)...	<sup>2</sup> 1.0	5.3		

Product code	Product	Production (million pairs)	
		1967	1963
	(AS REPORTED ON CENSUS ANNUAL FORM MA-31A, SHOES AND SLIPPERS)		
31411--	Shoes (including athletic), total.....	504.3	526.7
	Men's shoes (except athletic).....	123.7	110.7
	Men's workshoes.....	38.7	28.2
3141221	6" high and over (including over-the-foot boots).....	29.3	17.1
3141211	Less than 6" high.....	9.4	11.1
	Men's shoes, other than work.....	85.0	82.5
3141131	Handsewns (genuine moccasin construction with outsole attached).....	15.7	
3141141	Uppers of soft tannages (including desert boots and sandals).....	10.9	82.5
3141198	All other men's shoes (including dress).....	58.4	
	Youths' and boys' shoes (except athletic).....	25.3	24.0
3141323	Youths' shoes.....	12.7	24.0
3141313	Boys' shoes.....	12.6	
	Women's shoes (except athletic).....	258.0	275.2
3141421	Women's wedge heel (any height) or open toe (not over 8/8" heel).....	24.8	
	All other women's shoes (except athletic).....	233.2	275.2
3141433	Not over 8/8" heel.....	110.5	
3141435	9/8" heel and over.....	122.7	

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963--Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Production (million pairs)	
		1967	1963
	(AS REPORTED ON CENSUS ANNUAL FORM MA-31A, SHOES AND SLIPPERS)--Continued		
31411--	Shoes (including athletic)--Continued		
	Misses' shoes (except athletic).....	27.6	35.5
3141521	Misses' wedge heel (any height) or open toe (not over 8/8" heel).....	7.5	35.5
3141539	All other misses' shoes (except athletic).....	20.1	
3141541	Children's shoes (except athletic).....	30.7	30.7
3141601	Infants' and babies' shoes.....	30.0	33.5
	Athletic shoes.....	6.9	9.8
3141721	Men's, youths', and boys' athletic shoes.....	5.5	9.8
3141729	All other athletic shoes.....	1.5	
3141798	Other footwear (except those with sole vulcanized or molded to fabric upper).....	2.0	7.2

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind.

<sup>1</sup>The Census Annual Form MA31A, Shoes and Slippers data represents production of shoes whereas the Census of Manufactures data represents shipments of shoes and are not directly comparable. Detailed statistics are shown in Current Industrial Reports Series MA31A. Shoes and Slippers Summary for 1967.

<sup>2</sup>Quantity estimated using the average unit value reported by other shoe producing companies reporting both quantity and value of shipments.

<sup>3</sup>Detailed statistics of shoes and slipper production by type of construction are shown in Current Industrial Reports Series M31A, released on September 13, 1968.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3141.--SHOES, EXCEPT RUBBER					
	Materials, parts, supplies, total.....		(X)	1,122.3	(X)	983.4
	Finished leather:					
	Upper leather, total.....	Million sq. ft...	855.2	428.3	945.8	398.4
311103	Lining leather.....	do.....	855.2	252.6	255.6	56.5
311104	All other upper leather.....	do.....		175.7	690.2	342.0
	Soling leather, total.....	Million lbs.....	(NA)	67.2	127.8	52.4
311105	Innersole leather.....	do.....	(NA)	42.1	45.8	13.3
311106	All other soling leather.....	do.....	(NA)	25.1	82.1	39.1
311107	All other finished leather.....		(X)	10.9	(X)	5.9
	Cut stock and findings.....		(X)	151.9	(X)	126.2
307984	Composition and nuclear.....	Million lbs.....	(NA)	15.1	75.6	26.0
306965	Rubber and elastomer resins soling slabs and top lift sheets...	Million sq. ft...	(NA)	23.6	(NA)	(NA)
300115	Plastic, natural and synthetic rubber.....		(X)	66.8	(X)	40.6
313108	Leather and other.....		(X)	46.4	(X)	59.6
229503	Coated impregnated or laminated plastics on cloth backing, including artificial leather.....	Million lin. yds.	<sup>e</sup> 13.0	18.6	13.2	15.6
307913	Unsupported plastic film and sheeting, not backed including poromerics.....	Million sq. yds.	<sup>e</sup> 6.0	13.0	(NA)	2.1
220129	Broadwoven fabrics (over 12 inches wide).....	Million lin. yds.	<sup>e</sup> 29.3	25.8	47.3	23.9
970011	Containers and other packaging supplies.....		(X)	36.2	(X)	35.9
970099	All other materials, parts, supplies.....		(X)	221.4	(X)	213.5
976000	Materials, parts, supplies, n.s.k. <sup>1</sup> .....		(X)	149.0	(X)	115.4

<sup>e</sup>From 10 to 30 percent of this figure was estimated. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3141, these small establishments accounted for approximately 0.2 percent of payrolls and 0.2 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

### House slippers

SIC Code 3142

**preliminary  
report**

The House Slippers Industry includes establishments primarily engaged in manufacturing house slippers of leather or other materials. Establishments primarily engaged in manufacturing boots and shoes designed primarily for street, work, play or sport wear are classified in industry 3141; and rubbers, rubber boots, storm shoes, galoshes and other footwear with rubber soles vulcanized to fabric uppers are classified in industry 3021.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments clas-

sified in the House Slipper Industry amounted to \$174.0 million, an increase of 40.8 percent compared with 1963. Value added by manufacture at \$90.8 million in 1967 was 40.6 percent more than value added in 1963. Average employment in the industry showed an increase of 10.0 percent from 1963 to a total of 12.1 thousand employees in 1967.

Of the \$174.0 million total value of shipments and other receipts of establishments classified as house slipper manufacturers, \$13.9 million were products primary to other industries; and \$14.0 million were receipts for miscellaneous activities. The industry shipments of primary products represented 92 percent of the total manufactured product shipments, primary and

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3142.—HOUSE SLIPPERS														
1967 Census....	131	91	12.1	50.8	10.6	19.6	37.8	90.8	83.5	174.0	1.2	17.3	92	90
1967 ASM <sup>1</sup> .....	(NA)	(NA)												
1966 ASM <sup>1</sup> .....	(NA)	(NA)	13.7	53.1	11.7	21.9	39.4	86.8	76.9	162.0	1.4	19.0	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	12.6	49.0	11.3	20.2	36.5	78.6	71.2	148.6	1.5	16.1	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	12.1	45.1	10.8	19.2	34.6	72.5	65.2	137.7	1.3	15.8	(NA)	(NA)
1963 Census....	153	97	11.0	39.8	9.9	17.3	30.4	64.6	58.9	123.6	1.1	11.9	90	85
1962 ASM <sup>1</sup> .....	(NA)	(NA)	12.0	42.4	10.6	18.4	31.5	67.7	66.2	133.7	*1.1	13.9	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	12.3	40.1	10.8	18.1	29.4	67.9	64.4	131.8	*1.2	11.4	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	11.3	38.6	10.0	17.4	28.9	60.1	59.1	119.4	(S)	10.4	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	12.5	41.0	11.0	19.2	30.8	65.7	62.8	128.4	(S)	11.6	(NA)	(NA)
1958 Census <sup>2</sup> ....	164	97	11.5	37.1	10.2	18.0	28.3	59.7	52.6	112.1	0.6	10.5	90	85

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

(S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 2 and 3, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director



secondary. This percent, called the specialization ratio for the industry, was 90 percent in 1963.

The total value of house slippers shipped by all producers in 1967 was \$162.3 million of which \$146.1 million, or 90 percent, were shipped by plants classified in industry 3142, House Slippers, while the remainder was shipped by plants classi-

fied in other industries. This percent, called the coverage ratio, was 85 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

#### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3142, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

M31A, Shoes and Slippers. The census data represent footwear shipments whereas production data are shown in series M31A.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

(see appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture  (million dollars)	Cost of materials  (million dollars)	Value of shipments  (million dollars)	Capital expenditures, new  (million dollars)	All employees  (1,000)	Value added by manufacture  (million dollars)
	Total  (number)	With 20 employees or more (number)	Number  (1,000)	Payroll  (million dollars)	Number  (1,000)	Man-hours  (millions)	Wages  (million dollars)						
	INDUSTRY 3142.—HOUSE SLIPPERS												
United States, total.....	131	91	12.1	50.8	10.6	19.6	37.8	90.8	83.5	174.0	1.2	11.0	64.6
New England.....	26	18	2.3	9.9	2.0	3.7	7.0	16.0	16.1	32.3	0.1	2.7	14.6
Massachusetts.....	17	12	1.8	7.6	1.6	2.8	5.4	12.6	13.3	26.1	0.1	2.3	12.3
Middle Atlantic.....	75	53	6.9	29.7	6.1	11.2	22.9	50.8	52.2	103.2	0.7	6.2	37.8
New York.....	60	42	5.0	20.4	4.4	7.9	15.8	36.3	38.2	74.7	0.5	4.3	26.2
East North Central....	9	6	0.8	3.6	0.6	1.1	2.1	7.3	4.1	11.3	(D)	0.8	4.8
South.....	13	11	1.6	5.7	1.4	2.8	4.4	12.9	8.2	20.5	0.2	(D)	(D)
South Atlantic.....	8	7	1.1	3.9	1.0	2.0	3.1	9.2	6.0	14.9	0.1	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity	Value (\$1,000)	Quantity	Value (\$1,000)
31420 60	House slippers, total As reported in the census of manufactures..... As reported on Census annual Form MA-31A <sup>1</sup> .....	98.5 95.6	162.3 (NA)	79.8 77.6	127.6 (NA)
Product code	Product	Production (million pairs)			
		1967		1963	
	(AS REPORTED ON CENSUS ANNUAL FORM MA-31A, SHOES AND SLIPPERS)				
31420 --	Slippers, total.....			95.6	77.6
31420 13	All slippers of slip-on type with underwedge heel or blown sponge rubber midsole.....			10.9	77.6
	Other slippers:				
31420 21	Men's, youths', and boys'.....			14.9	
31420 23	Men's.....			13.8	
	Youths' and boys'.....			1.0	
31420 41	Women's.....			57.2	
	Misses', children's, infants', and babies'.....			12.7	7.2
31420 45	Misses' and children's.....			9.3	
31420 61	Infants' and babies'.....			3.3	
31417 98	Other footwear (except those with sole vulcanized or molded to fabric upper).....			2.0	

<sup>1</sup>Represents production whereas shipment data are collected in the census of manufactures.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3142.—HOUSE SLIPPERS					
	Materials, parts, supplies, total.....		(X)	68.0	(X)	54.7
	Finished leather:					
	Upper leather, total.....	Million sq. ft..	22.2	10.0	24.9	9.6
311103	Lining leather.....	..do.....	e 22.2	10.0	5.7	1.9
311104	All other upper leather.....	..do.....			19.2	7.6
	Soling leather, total.....	Million lbs.....	(NA)	1.8	4.2	2.9
311105	Innersole leather.....	..do.....	(NA)	1.8	0.3	0.2
311106	All other soling leather.....	..do.....			3.9	2.7
311107	All other finished leather.....		(X)	1.1	(X)	1.4
	Cut stock and findings.....		(X)	4.6	(X)	3.7
307984	Composition and nuclear.....	Million lbs.....	(NA)	1.7	1.8	1.3
300115	Plastic, natural and synthetic rubber.....		(X)	2.3	(X)	1.6
313108	Leather and other.....		(X)	0.6	(X)	0.8
229503	Coated impregnated or laminated plastics on cloth backing, cluding artificial leather.....	Million lin. yds.....	e 3.8	6.1	(D)	(D)
307913	Unsupported plastic film and sheeting, not backed.....	Million sq. yds.	(NA)	0.5	(D)	(D)
220129	Broadwoven fabrics (over 12 inches wide).....	Million lin. yds.....	e 7.4	10.2	5.6	6.5
970011	Containers and other packaging supplies.....		(X)	3.0	(X)	2.4
970099	All other materials, parts, supplies, including rubber and elastomer resin soling slabs and top lift sheets.....		(X)	14.1	(X)	15.8
976000	Materials, parts, supplies, n.s.k.....		(X)	16.6	(X)	12.4

(D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or from related figures. <sup>e</sup>From 10 to 30 percent of this figure was estimated.

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3142, these small establishments accounted for approximately 0.6 percent of payrolls and 0.7 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

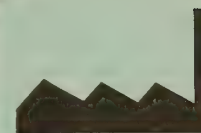
**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# 1967 CENSUS OF MANUFACTURES



MC67(P)-31B-1

## INDUSTRY SERIES

**preliminary  
report**

### Leather gloves and mittens

SIC Code 3151

The Leather Gloves and Mittens Industry includes establishments primarily engaged in manufacturing dress, semidress, and work gloves exclusively of leather or leather with lining of other material. Establishments primarily engaged in manufacturing sporting and athletic gloves are classified in industry 3949; and dress, semidress, and work gloves and mittens of cloth or cloth and leather combined in industry 2381.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Leather Gloves and Mittens Industry

amounted to \$87.7 million, an increase of 8.8 percent compared with 1963. Value added by manufacture at \$36.6 million in 1967 was 13.7 percent more than value added in 1963. Average employment in the industry showed a decrease of 16.9 percent from 1963 to a total of 6.4 thousand employees in 1967.

Of the \$87.7 million total value of shipments and other receipts of establishments classified as leather gloves and mittens, \$9.3 million were products primary to other industries; and \$18.6 million were receipts for miscellaneous activities. The industry shipments of primary products represented 87 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 81 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3151.--LEATHER GLOVES AND MITTENS														
1967 Census....	148	72	6.4	22.8	5.7	10.0	18.2	36.6	48.8	87.7	0.8	14.1	87	84
1966 ASM <sup>1</sup> .....	(NA)	(NA)	7.4	25.1	6.5	11.5	20.4	37.0	54.1	89.6	*0.6	15.5	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	7.3	24.2	6.5	11.3	19.1	35.4	48.0	81.9	0.3	15.1	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	6.9	23.4	6.2	11.2	18.7	38.0	46.0	83.8	0.2	13.7	(NA)	(NA)
1963 Census....	166	87	7.7	24.4	6.9	12.2	19.5	32.2	46.7	80.6	0.3	14.9	81	89
1962 ASM <sup>1</sup> .....	(NA)	(NA)	6.2	18.5	5.4	9.9	14.6	25.5	31.2	56.4	(Z)	12.8	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	6.8	20.1	6.1	10.7	16.2	30.1	35.1	64.5	(Z)	13.7	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	6.9	19.0	6.1	10.4	15.4	28.1	33.1	61.2	(S)	12.1	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	6.6	18.3	5.9	10.2	14.9	27.8	33.7	61.0	(S)	10.8	(NA)	(NA)
1958 Census <sup>2</sup> ....	179	76	6.2	16.0	5.5	9.2	12.7	26.0	28.3	54.2	0.3	9.5	85	86

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available. (Z) Less than \$50 thousand.

(S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 6 and 5, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary****Rocco C. Siciliano, Under Secretary****BUREAU OF THE CENSUS George Hay Brown, Director**



The total value of leather gloves and mittens shipped by all producers in 1967 was \$71.8 million of which \$60.2 million, or 84 percent, were shipped by plants classified in industry 3151, Leather Gloves and Mittens, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 89 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3151, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

#### MA-23D Gloves and Mittens.

The differences between the figures reported in the census and those reported in the MA-23D, Gloves and Mittens, are a result of reporting variations for individual plants furnishing data on both surveys.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total	With 20 employees or more (number)	Number	Payroll (million dollars)	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
	INDUSTRY 3151.--LEATHER GLOVES AND MITTENS												
United States, total.....	148	72	6.4	22.8	5.7	10.0	18.2	36.6	48.8	87.7	0.8	7.7	32.2
Northeast.....	72	29	3.0	10.9	2.6	4.5	8.4	17.7	27.5	46.7	(D)	4.1	16.3
New York.....	68	26	2.9	10.3	2.5	4.3	7.9	17.1	26.0	44.7	(D)	3.9	15.5
East North Central....	35	22	1.9	6.7	1.7	3.0	5.5	9.9	11.9	22.5	(D)	2.2	8.9
Illinois.....	7	6	0.6	1.9	0.5	0.9	1.7	2.7	3.7	7.3	(D)	0.6	1.9
Wisconsin.....	19	9	0.8	2.8	0.7	1.3	2.2	3.7	5.3	9.0	(D)	1.2	4.6
West North Central....	9	7	0.5	1.8	0.4	0.8	1.4	2.5	3.8	6.3	(D)	0.5	2.6
South.....	11	9	0.7	2.4	0.7	1.3	2.1	4.5	4.0	8.5	(D)	0.5	2.3
West.....	21	5	0.3	0.9	0.2	0.4	0.8	2.0	1.6	3.6	(Z)	0.4	2.1
California.....	9	4	0.2	0.6	0.1	0.2	0.5	1.0	0.9	1.9	(Z)	0.2	0.9

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000 dozen pairs)	Value (million dollars)	Quantity (1,000 dozen pairs)	Value (million dollars)
3151- --	LEATHER GLOVES AND MITTENS, TOTAL <sup>1</sup> .....	2,911	71.8	2,720	62.0
	As reported in the census of manufacturers, total.....	954	32.6	1,142	35.6
31510 10	Men's and boys' dress and semidress.....	954	32.6	819	23.8
31510 50	Women's and children's dress and semidress.....			323	11.8
	As reported on census annual Form MA-23D <sup>2</sup> .....	937	<sup>r</sup> 33.2	1,074	(X)
31510 70	All leather work gloves and mittens, including fur:				
	As reported in the census of manufacturers.....	1,739	33.8	1,417	22.7
	As reported on census annual Form MA-23D <sup>2</sup> .....	1,739	<sup>r</sup> 36.0	1,553	(X)
31510 00	Leather gloves and mittens, n.s.k. (For companies with 10 or more employees. See Note.).....	<sup>3</sup> 137	3.4	<sup>3</sup> 161	3.7
31510 02	Leather gloves and mittens, n.s.k. (For companies with less than 10 employees. See Note.).....	<sup>3</sup> 81	2.0		

Product code	Product	1967 shipments		1963 production (1,000 dozen pairs)
		Quantity (1,000 dozen pairs)	Value (million dollars)	
	AS REPORTED ANNUALLY ON CENSUS FORM MA-23D, GLOVES AND MITTENS			
	All leather dress and semidress gloves and mittens, total.....	937	<sup>r</sup> 33.2	1,074
	Block cut:			
31510 14	Men's and boys'.....	469	(X)	614
31510 54	Women's and children's.....	116	(X)	124
	Other than block cut:			
31510 17	Men's and boys'.....	216	(X)	166
31510 57	Women's and children's.....	136	(X)	170
	All leather work gloves and mittens, total.....	1,739	<sup>r</sup> 36.0	1,553
31510 81	All grain, except welders.....	1,120	(X)	1,002
31510 83	All split, except welders.....	358	(X)	310
31510 89	Leather, except all grain and all split (including welders).....	261	(X)	241

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind. <sup>r</sup>Revised. (X) Not applicable.

<sup>1</sup>Includes only all leather gloves and mittens. Leather and fabric combinations are classified in industry 2381, Fabric Dress and Work Gloves.

<sup>2</sup>For 1963, the quantity data reported on census annual Form MA-23D, Gloves and Mittens, represent quantity produced rather than quantity shipped.

<sup>3</sup>Quantity estimated based on the average unit value reported by other glove producing companies reporting both quantity and value of shipments.

TABLE 4. **Materials Consumed, by Kind: 1967 and 1963**

(See appendix. "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3151.--LEATHER GLOVES AND MITTENS					
	Materials, containers, and supplies, total.....		(X)	33.2	(X)	34.3
311100	Finished leather.....	Million sq. ft....	76.7	22.6	76.9	22.2
220123	Broadwoven fabrics (cotton, wool, manmade fiber fabrics, etc.)...	Million lin. yds..	(NA)	1.3	2.9	1.8
225601	Knitted fabrics (cotton, wool, manmade fiber fabrics, etc.).....	do.....	(NA)	1.2	(NA)	1.2
970099	All other materials and components, parts, containers, and supplies.....		(X)	4.7	(X)	4.6
976000	Materials, containers, and supplies, n.s.k.....		(X)	3.4	(X)	4.5

n.s.k. Not specified by kind. (X) Not applicable. (NA) Not available.

<sup>1</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3151, these small establishments accounted for approximately 0.4 percent of payrolls and 0.5 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products**--In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture**--This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment**--For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

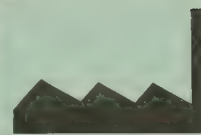
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories**--Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

### Luggage

SIC Code 3161

### preliminary report

The Luggage Industry includes establishments primarily engaged in manufacturing luggage of leather or other materials. Establishments primarily producing instrument cases other than musical instruments, jewelry boxes and cases, and travel kits are classified in industry 3172.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Luggage Industry amounted to \$329.7 million, an increase of 57 percent compared with

1963. Value added by manufacture at \$185.2 million in 1967 was 6.4 percent more than added in 1963. Average employment in the industry showed an increase of 29 percent from 1963 to a total of 21.2 thousand employees in 1967.

Of the \$329.7 million total value of shipments and other receipts of establishments classified as luggage, \$12.7 million were products primary to other industries; and \$10.0 million were receipts for miscellaneous activities. The industry shipments of primary products represented 96 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 95 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3161.—LUGGAGE														
1967 Census.....	326	151	21.2	95.6	18.1	33.7	68.2	185.2	151.3	329.7	8.7	45.2	96	98
1967 ASM <sup>1</sup> .....	(NA)	(NA)												
1966 ASM <sup>1</sup> .....	(NA)	(NA)	19.6	82.9	17.0	31.9	60.1	143.7	138.7	275.8	4.9	46.0	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	18.4	74.1	15.8	29.1	53.8	132.1	129.1	261.6	3.6	42.1	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	16.4	66.3	14.1	27.9	48.6	121.5	110.8	232.9	2.1	32.2	(NA)	(NA)
1963 Census.....	379	145	16.4	62.9	14.1	26.3	46.7	112.8	100.4	210.3	1.9	36.3	95	94
1962 ASM <sup>1</sup> .....	(NA)	(NA)	16.1	61.6	13.6	25.8	45.4	110.1	97.1	207.9	*1.7	38.6	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	15.9	57.0	13.6	25.6	43.2	97.9	89.1	186.2	*1.7	37.9	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	18.0	61.0	15.5	28.6	45.1	107.5	94.8	201.0	(S)	35.8	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	16.8	57.9	14.6	27.4	43.4	101.6	96.2	193.5	(S)	32.0	(NA)	(NA)
1958 Census <sup>2</sup> .....	428	159	15.9	54.7	13.7	25.1	40.3	96.6	88.2	184.7	1.5	28.2	95	95

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

(S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 2 and 3, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

<sup>3</sup>Some of the small establishments in this industry may have been misclassified as to industry. This does not significantly affect the statistics other than the number of establishments. (See section of text on scope and coverage for further explanation.)

Issued September 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director

The total value of luggage shipped by all producers in 1967 was \$314.6 million of which \$307.0 million, or 98 percent, were shipped by plants classified in industry 3161, luggage, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 94 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

#### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3161, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

M31E, Luggage, Briefcases, and Personal Leather Goods. The publication of monthly data in this series was terminated, however, with the December 1968, monthly report.

The 1967 summary data compiled from this survey are shown in table 3 together with the comparable totals reported in the census of manufactures. The two sets of 1967 data differ primarily because of the different procedures used in deriving the totals. All manufacturing plants are included in the census of manufactures. The monthly M31E data, on the other hand, are estimates based on reports received from a sample of producers benchmarked to their 1963 Census of Manufactures reports. Over a period of time, most samples, including this one, are subject to increasing errors pending rebenchmarking to a complete universe. The sample for the luggage and personal leather goods survey did not completely reflect the changes in business activity of the nonsample companies and consequently the estimates differed from the results of the complete census.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total	With 20 employ- ees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3161.-LUGGAGE													
United States, total.....	326	151	21.2	95.6	18.1	33.7	68.2	185.2	151.3	329.7	8.7	16.4	112.8
New England.....	28	13	2.0	9.2	1.6	2.9	5.8	20.7	17.9	38.5	0.2	1.4	11.7
Massachusetts.....	18	7	0.6	2.2	0.5	0.8	1.6	4.8	4.1	8.9	0.1	0.5	2.3
Middle Atlantic.....	151	77	7.4	32.3	6.4	11.6	23.1	61.4	55.5	116.1	0.8	6.7	40.6
New York.....	103	51	4.9	21.1	4.3	7.6	15.0	42.0	34.6	76.0	(D)	3.9	24.2
New Jersey.....	27	15	1.7	7.9	1.5	2.9	6.0	13.2	13.5	26.5	(D)	1.9	11.1
Pennsylvania.....	21	11	0.8	3.4	0.6	1.1	2.1	6.2	7.4	13.6	0.1	0.9	5.3
East North Central:													
Ohio.....	9	2	0.2	0.9	0.2	0.3	0.6	1.6	1.1	2.7	(Z)	0.2	1.1
Indiana.....	7	7	0.4	1.8	0.3	0.6	1.3	2.1	2.7	4.9	0.3	0.3	1.2
Wisconsin.....	12	3	0.2	0.9	0.2	0.4	0.8	1.3	1.1	2.4	(Z)	0.2	1.2
South Atlantic.....	14	9	2.6	9.7	2.3	4.2	8.2	19.4	19.2	37.2	(D)	1.4	10.6
West South Central....	9	5	0.4	1.8	0.4	0.8	1.4	3.1	2.3	5.4	0.1	0.3	1.7
Pacific.....	33	10	0.8	4.2	0.7	1.4	3.1	7.6	5.9	13.4	0.1	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3161- --	LUGGAGE, TOTAL <sup>1</sup> .....		(X)	314.6	(X)	204.8
	Women's hand luggage (except zippered luggage):					
	As reported in the census of manufactures.....	1,000 units...	<sup>2</sup> 11,895	<sup>2</sup> 100.0	<sup>2</sup> 8,873	<sup>2</sup> 72.4
31610 16	Hard side (except molded).....	...do.....	5,083	35.1	5,090	25.6
31610 18	Soft side (lock construction).....	...do.....	1,930	24.0	685	8.4
31610 24	Molded, all types.....	...do.....	4,882	40.9	2,959	36.7
	As reported on Census monthly Form M31E.....	...do.....	<sup>2</sup> 11,589	<sup>2</sup> 95.1	<sup>2</sup> 7,975	<sup>2</sup> 64.8
	Overnight, weekend, traincases, pullman, hat and shoe, wardrobe, overseas, and hatboxes:					
31610 15	Hard side (except molded).....	...do.....	4,949	95.1	7,975	64.8
31610 17	Soft side (lock construction).....	...do.....	1,914			
31610 22	Molded, all types.....	...do.....	4,194			
	Men's hand luggage (except zippered luggage):					
	As reported in the census of manufactures.....	...do.....	3,136	46.7	1,802	24.8
	As reported on Census monthly Form M31E.....	...do.....	3,362	49.0	1,641	22.6
31610 35	Hard side (except molded):					
	As reported in the census of manufactures.....	...do.....	728	9.7	638	5.8
	As reported on Census monthly Form M31E.....	...do.....	891	(NA)	1,492	(NA)
31610 37	Soft side (lock construction):					
	As reported in the census of manufactures.....	...do.....	919	11.8	219	3.8
	As reported on Census monthly Form M31E.....	...do.....	853	(NA)	149	(NA)
31610 32	Molded, all types:					
	As reported in the census of manufactures.....	...do.....	1,489	25.2	945	15.2
	As reported on Census monthly Form M31E.....	...do.....	1,618	(NA)	( <sup>5</sup> )	( <sup>5</sup> )
31610 39	Zippered hand luggage, men's and women's:					
	As reported in the census of manufactures.....	...do.....	10,084	52.6	6,313	30.8
	As reported on Census monthly Form M31E.....	...do.....	8,381	35.7	5,076	29.3
31610 53	Occupational luggage cases, sample cases, binocular and camera cases.....	...do.....	<sup>e</sup> 1,979	12.0	1,226	7.3
31610 63	Trunks, hand trunks, and lockers:					
	As reported in the census of manufactures.....	...do.....	<sup>e</sup> 1,039	7.3	961	6.0
	As reported on Census monthly Form M31E.....	...do.....	1,579	9.7	963	6.3
31610 73	Brief bags, briefcases, schoolbags, envelopes, and zippered ring binders, and catalog cases:					
	As reported in the census of manufactures.....	...do.....	<sup>e</sup> 3,421	20.5	4,666	15.0
	As reported on Census monthly Form M31E.....	...do.....	2,390	<sup>5</sup> 29.6	4,309	<sup>5</sup> 19.8
31610 71	Brief bags:					
31610 72	Split leather.....	...do.....	29	(NA)	278	(NA)
31610 74	Top grain leather.....	...do.....	55		142	
31610 75	Imitation leather.....	...do.....	634		882	
31610 75	Envelopes (under arm cases and portfolios), and zippered ring binders.....	...do.....	390	(X)	756	2.8
31610 77	Catalog cases.....	...do.....	161		70	
31610 78	School bags.....	...do.....	1,121		2,181	
	Attache' cases:					
	As reported in the census of manufactures.....	...do.....	<sup>e</sup> 3,007	21.4	2,002	14.8
31610 83	Molded.....	...do.....	<sup>e</sup> 1,350	13.3	2,002	14.8
31610 85	Other than molded.....	...do.....	<sup>e</sup> 1,657	8.1		
	As reported on Census monthly Form M31E.....	...do.....	2,714	( <sup>6</sup> )	1,269	( <sup>6</sup> )

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3161- --	LUGGAGE—Continued					
31610 81	Musical instrument cases.....	1,000 units...	<sup>e</sup> 1,582	10.8	1,429	6.6
31610 98	Other luggage.....		(X)	14.3	(X)	11.7
31610 00	Luggage, n.s.k. (For companies with 10 or more employees. See Note.).....		(X)	23.1		
31610 02	Luggage, n.s.k. (For companies with less than 10 employees. See Note.).....		(X)	5.9	(X)	15.6

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

<sup>e</sup>From 10 to 30 percent of this figure was estimated. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>The reasons for the differences between the data collected in the census of manufactures and the current monthly survey M31E are discussed in the text.

<sup>2</sup>For both 1963 and 1967 data collected in the census of manufactures are not completely comparable to those collected on the census monthly survey M31E to the extent that vanity cases are included in the monthly survey data but are classified in industry 3172, Small Leather Goods, in the census of manufactures.

<sup>3</sup>For 1963, includes 139 thousand other women's hand luggage, including cosmetic cases, etc., but excluding vanity cases, valued at \$1.6 million. These data were not collected separately for 1967 and are included in the detail shown for women's hand luggage.

<sup>4</sup>Includes shipments of 532 thousand other women's hand luggage including cosmetic cases, etc., excluding vanity cases. Comparable value figures were not collected separately and are included in the total. It should be noted that the quantity figures for this product were withheld from the monthly publication (M31E) and may be of limited reliability.

<sup>5</sup>For 1963, figures for men's molded hand luggage were not collected separately but were included with men's hard side and soft side hand luggage.

<sup>6</sup>Value for attache' cases were not collected separately but are included with "Brief bags, briefcases, schoolbags, envelopes and zippered ring binder and catalog cases."

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3161.--LUGGAGE					
	Materials, containers, and supplies, total.....		(X)	143.5	(X)	93.5
	Broadwoven fabrics (piece goods):					
221101	Cotton.....	Million lin. yds.	(NA)	1.7	(NA)	0.9
222101	Rayon and acetate.....	...do.....	<sup>e</sup> 24.7	8.3	9.7	3.5
220128	Other broadwoven fabrics.....	...do.....	(NA)	2.1	(NA)	1.6
229503	Coated, impregnated, or laminated plastics on cloth backing, including artificial leather.....	...do.....	(NA)	19.7	(NA)	11.7
307913	Unsupported plastic film and sheeting, not backed, excluding packaging materials.....	Million sq. yds..	(NA)	7.2	(NA)	7.0
311100	Finished leather.....	Million sq. ft...	(NA)	4.9	(NA)	3.2
342953	Trunk and luggage hardware, including locks.....		(X)	23.1	(X)	9.8
970090	Other materials, parts, containers, and supplies.....		(X)	44.3	(X)	35.3
976000	Materials, containers, and supplies, n.s.k.....		(X)	32.2	(X)	20.5

<sup>e</sup>From 10 to 30 percent of this figure was estimated. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3161, these small establishments accounted for approximately 1.5 percent of payrolls and 1.7 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

**U.S. DEPARTMENT OF COMMERCE  
BUREAU OF THE CENSUS  
WASHINGTON, D.C. 20233**

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**OFFICIAL BUSINESS**

**POSTAGE AND FEES PAID  
U.S. DEPARTMENT OF COMMERCE**





# 1967 CENSUS OF MANUFACTURES



MC67(P)-31B-3

## INDUSTRY SERIES

**preliminary  
report**

### Women's handbags and purses

SIC Code 3171

The Women's Handbags and Purses Industry includes establishments primarily engaged in manufacturing women's handbags and purses of leather or other materials, except precious metal (industry 3911).

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Women's Handbags and Purses Industry amounted to \$325.7 million, an increase of 16.2 percent compared with 1963. Value added by manufacture at \$172.9 million in 1967

was 20.8 percent more than value added in 1963. Average employment in the industry showed a decrease of 2.0 percent from 1963 to a total of 24.0 thousand employees in 1967.

Of the \$325.7 million total value of shipments and other receipts of establishments classified as women's handbags and purses manufacturers, \$3.0 million were products primary to other industries; and \$13.5 million were receipts for miscellaneous activities. The industry shipments of primary products represented 99 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 98 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3171.--WOMEN'S HANDBAGS AND PURSES														
1967 Census . . . .	499	249	24.0	104.3	21.6	41.5	82.8	172.9	153.3	325.7	2.2	26.3	99	98
1966 ASM <sup>1</sup> . . . . .	(NA)	(NA)	22.7	90.5	20.1	40.1	70.6	149.5	142.9	291.9	*2.9	21.3	(NA)	(NA)
1965 ASM <sup>1</sup> . . . . .	(NA)	(NA)	22.9	86.1	20.1	38.7	68.7	137.3	134.4	271.0	*2.0	21.2	(NA)	(NA)
1964 ASM <sup>1</sup> . . . . .	(NA)	(NA)	24.8	92.2	22.2	42.2	72.9	159.6	137.0	295.3	*1.6	21.3	(NA)	(NA)
1963 Census . . . . .	545	262	24.5	88.5	22.0	41.8	70.1	142.6	137.1	280.3	1.9	18.8	98	98
1962 ASM <sup>1</sup> . . . . .	(NA)	(NA)	24.0	81.2	21.7	41.3	66.6	134.1	128.6	263.4	1.3	17.3	(NA)	(NA)
1961 ASM <sup>1</sup> . . . . .	(NA)	(NA)	23.6	76.6	21.2	39.5	61.6	127.3	130.5	259.4	1.1	16.6	(NA)	(NA)
1960 ASM <sup>1</sup> . . . . .	(NA)	(NA)	23.2	74.0	20.7	39.0	58.6	127.7	130.0	258.4	1.1	18.5	(NA)	(NA)
1959 ASM <sup>1</sup> . . . . .	(NA)	(NA)	23.9	73.2	21.2	40.0	57.4	122.5	134.3	257.8	(S)	19.2	(NA)	(NA)
1958 Census <sup>2</sup> . . . .	624	262	22.0	68.7	19.5	37.3	54.3	111.5	119.4	231.1	1.6	20.0	96	98

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

(S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 4 and 3, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued November 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**



The total value of women's handbags and purses shipped by all producers in 1967 was \$314.8 million of which \$309.2 million, or 98 percent, were shipped by plants classified in industry 3171, Women's Handbags and Purses, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 98 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
	INDUSTRY 3171.--WOMEN'S HANDBAGS AND PURSES												
United States, total.....	499	249	24.0	104.3	21.6	41.5	82.8	172.9	153.3	325.7	2.2	24.5	142.6
New England.....	22	12	1.6	6.7	1.4	2.6	5.6	11.5	7.7	19.3	0.1	2.0	9.5
Middle Atlantic.....	389	202	18.8	82.1	17.1	32.9	66.2	136.6	125.0	261.1	1.6	19.6	117.4
New York.....	336	163	13.9	60.9	12.5	23.8	48.4	100.3	93.7	193.7	1.2	14.7	88.8
North Central.....	21	10	1.3	5.6	1.1	2.1	4.0	7.6	7.7	15.2	0.1	1.1	6.1
South.....	39	14	1.4	5.5	1.3	2.5	4.2	10.2	8.6	18.7	0.4	1.0	4.4
Florida.....	14	7	0.6	2.0	0.5	0.9	1.6	4.0	3.0	7.0	(D)	(D)	(D)
West South Central..	11	4	0.2	1.0	0.2	0.4	0.6	2.0	2.1	4.0	(Z)	(D)	(D)
West.....	28	11	0.9	4.4	0.7	1.4	3.1	7.0	4.4	11.4	0.1	0.9	5.1

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.  
(Z) Less than \$50 thousand.

**TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963**

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3171- --	WOMEN'S HANDBAGS AND PURSES, TOTAL.....	.....	(X)	314.8	(X)	266.1
31710 11	All leather and chiefly leather.....	Million units.	e15.7	95.0	14.7	67.6
31710 51	Plastic or chiefly plastic.....	...do.....	e60.0	147.8	70.6	140.6
31710 71	Other materials, except precious metals.....	...do.....	e6.8	24.1	10.3	30.9
31710 00	Ladies' and children's handbags and purses, n.s.k. (Represents companies with 10 or more employees.).....	.....	(X)	40.2	}	(X) 26.9
31710 02	Ladies' and children's handbags and purses, n.s.k. (Represents companies with less than 10 employees.).....	.....	(X)	7.7		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

<sup>e</sup>From 10 to 30 percent of this figure was estimated. n.s.k. Not specified by kind. (X) Not applicable.

**TABLE 4. Materials Consumed, by Kind: 1967 and 1963**

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3171.--WOMEN'S HANDBAGS AND PURSES					
	Materials, containers, and supplies, total.....	.....	(X)	138.5	(X)	123.5
	Broadwoven fabrics (piece goods):					
221101	Cotton.....	Million lin. yds.	(NA)	( <sup>1</sup> )	2.4	1.5
222101	Rayon and acetate.....	...do.....	(NA)	( <sup>1</sup> )	5.5	3.4
220128	Other broadwoven fabrics.....	...do.....	(NA)	( <sup>1</sup> )	2.6	3.0
229503	Coated, impregnated, or laminated plastics on cloth backing, including artificial leather.....	...do.....	15.6	20.3	22.6	24.7
307913	Unsupported plastic film and sheeting, not backed excluding packaging materials.....	Million sq. yds..	26.8	19.9	15.2	11.5
311100	Finished leather.....	Million sq. ft...	45.0	25.2	40.0	16.9
342953	Trunk and luggage hardware including locks.....	.....	(X)	4.2	(X)	(NA)
970099	Other materials, parts, containers, and supplies.....	.....	(X)	36.2	(X)	23.6
976000	Materials, containers, and supplies, n.s.k. <sup>2</sup> .....	.....	(X)	32.7	(X)	38.9

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Included with "other materials, parts, containers, and supplies".

<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3171, these small establishments accounted for approximately 2.3 percent of payrolls and 2.5 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

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# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products**--In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture**--This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment**--For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories**--Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

**Textile mill products • Apparel and leather • Chemicals, rubber, and plastics • Machinery and equipment • Primary metals • Intermediate metal products • Processed foods • Lumber, furniture, and paper products • Stone, clay, and glass products.**

A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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**U. S. DEPARTMENT OF COMMERCE  
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**Bureau of the Census**  
Washington, D.C. 20233

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OFFICIAL BUSINESS



# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

### Personal leather goods

SIC Code 3172

**preliminary  
report**

The Personal Leather Goods, Except Women's Handbags and Purses, Industry includes establishments primarily engaged in manufacturing small articles, such as billfolds, key cases, and coin purses of leather or other materials, except precious metal (industry 3911).

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Personal Leather Goods Industry amounted to \$186.7 million, an increase of 17.4

percent compared with 1963. Value added by manufacture at \$105.3 million in 1967 was 27.8 percent more than value added in 1963. Average employment in the industry showed an increase of 3.2 percent from 1963 to a total of 12.8 thousand employees in 1967.

Of the \$186.7 million total value of shipments and other receipts of establishments classified as personal leather goods manufacturers, \$14.5 million were products primary to other industries; and \$8.3 million were receipts for miscellaneous activities. The industry shipments of primary products represented 92 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 96 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3172.--PERSONAL LEATHER GOODS														
1967 Census....	298	106	12.8	58.3	10.7	19.8	38.5	105.3	81.1	186.7	2.0	26.1	92	92
1966 ASM <sup>1</sup> .....	(NA)	(NA)	15.6	62.6	13.1	24.4	42.7	105.0	90.2	195.8	*2.2	28.5	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	14.0	54.8	11.7	22.0	36.9	98.6	80.2	175.5	1.6	27.4	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	11.9	49.1	10.0	19.3	33.1	88.3	79.7	166.0	*1.5	26.1	(NA)	(NA)
1963 Census....	340	117	12.4	47.4	10.3	19.6	32.1	82.4	76.6	159.0	1.3	20.9	96	92
1962 ASM <sup>1</sup> .....	(NA)	(NA)	13.7	51.2	11.5	21.4	34.9	86.3	69.8	154.9	*1.8	19.8	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	13.4	48.0	11.4	21.2	32.5	81.0	64.6	144.6	*1.3	18.3	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	15.3	52.6	12.9	23.7	35.2	81.1	72.6	154.3	*5.6	20.4	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	15.1	52.0	12.7	23.7	35.3	82.3	72.7	153.4	*2.8	21.0	(NA)	(NA)
1958 Census <sup>2</sup> ...	400	123	13.7	46.5	11.5	21.4	31.9	75.8	62.5	138.1	1.4	19.0	91	87

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 4 and 3, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

<sup>3</sup>Some of the small establishments in this industry may have been misclassified as to industry. This does not significantly affect the statistics other than the number of establishments. (See section of text on scope and coverage for further explanation.)

Issued November 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**

The total value of personal leather goods shipped by all producers in 1967 was \$178.4 million of which \$163.9 million, or 92 percent, were shipped by plants classified in industry 3172, Personal Leather Goods, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was also 92 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

#### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3172, the Census Bureau collected current statistics on selected products. These data appear in the Current Industrial Reports Series:

M31E, Luggage, Briefcases, and Personal Leather Goods. The publication of monthly data in this series was terminated, however, with the December 1968, monthly report.

The 1967 summary data compiled from this survey are shown in table 3 together with the comparable totals reported in the census of manufactures. The two sets of 1967 data differ primarily because of the different procedures used in deriving the totals. All manufacturing plants are included in the census of manufactures. The monthly M31E data, on the other hand, are estimates based on reports received from a sample of producers benchmarked to their 1963 Census of Manufactures reports. Over a period of time, most samples, including this one, are subject to increasing errors pending rebenchmarking to a complete universe. The sample for the luggage and personal leather goods survey did not completely reflect the changes in business activity of the nonsample companies and consequently the estimates differ from the results of a complete census.



TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3172.--PERSONAL LEATHER GOODS													
United States, total.....	298	106	12.8	58.3	10.7	19.8	38.5	105.3	81.1	186.7	2.0	12.4	82.4
New England.....	39	18	2.2	11.3	1.7	3.1	6.6	19.3	16.2	36.1	0.6	1.9	13.8
Rhode Island.....	11	6	0.4	1.4	0.3	0.6	1.0	2.5	2.1	4.5	(2)	(D)	(D)
Middle Atlantic.....	169	64	6.5	27.0	5.6	10.4	19.6	47.0	38.8	86.2	0.9	6.9	43.4
New York.....	139	49	4.2	17.6	3.6	6.7	12.9	32.7	26.7	59.8	0.7	5.2	32.9
North Central.....	42	15	3.0	15.5	2.3	4.4	8.8	30.3	20.1	49.8	0.3	2.7	20.9
South.....	17	5	0.6	2.0	0.5	0.9	1.5	3.9	2.5	6.3	(2)	0.7	3.0
West.....	31	4	0.6	2.6	0.5	1.0	2.0	4.7	3.6	8.2	0.1	0.2	1.4

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000 units)	Value (million dollars)	Quantity (1,000 units)	Value (million dollars)
3172- --	LEATHER GOODS, TOTAL.....	(X)	178.4	(X)	154.3
31720 --	Personal leather goods, except handbags and purses: Billfolds, wallets, and French purses and clutches: <sup>1</sup>				
	As reported in the census of manufactures.....	40,494	83.0	46,207	68.6
	As reported on Census monthly Survey M31E.....	43,112	102.1	33,127	56.9
	Leather:				
31720 11	As reported in the census of manufactures.....	33,475	76.0	32,109	58.2
	As reported on Census monthly Survey M31E.....	35,965	(NA)	29,277	(X)
	Other than leather (plastic, fiber, etc.):				
31720 15	As reported in the census of manufactures.....	7,019	7.0	14,098	10.4
	As reported on Census monthly Survey M31E.....	7,147	(NA)	3,850	(X)
	Travel kits (fitted and unfitted): <sup>1</sup>				
31720 31	As reported in the census of manufactures.....	4,320	11.7	2,467	7.1
	As reported on Census monthly Survey M31E.....	4,093	10.9	2,278	6.0
	Jewelry boxes and cases, and instrument cases, except musical instrument cases, total.....	(NA)	25.2	31,731	25.7
31720 53	Jewelry boxes and cases.....	(NA)	22.3	29,235	19.8
31720 55	Instrument cases, except musical instrument cases.....	647	2.9	2,496	5.9
	Other personal goods (key cases, cigarette cases, vanity cases, clutches, secretaries, pass cards, tobacco pouches, cosmetic bags, etc.):				
31720 98	As reported in the census of manufactures.....	(X)	39.5	(X)	41.2
	As reported on Census monthly Survey M31E.....	(X)	35.6	(X)	28.2
31720 00	Small leather goods, n.s.k. (For companies with 10 or more employees. See Note.).....	(X)	12.0	(X)	11.7
31720 02	Small leather goods, n.s.k. (For companies with less than 10 employees. See Note.).....	(X)	7.0		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. (X) Not applicable.

<sup>1</sup>See text, "Comparability of the Census of Manufactures and Current Industrial Reports Data."

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3172.--PERSONAL LEATHER GOODS					
	Materials, containers, and supplies, total.....		(X)	76.0	(X)	62.4
229503	Coated, impregnated, or laminated plastics on cloth backing, including artificial leather.....	Million lin. yds.	<sup>e</sup> 5.2	4.4	(NA)	5.0
307913	Unsupported plastic film and sheeting, not backed, excluding packaging materials.....	Million sq. yds..	<sup>e</sup> 4.3	2.6	4.9	2.5
311100	Finished leather.....	Million sq. ft..	40.5	19.7	36.9	15.8
970099	Other materials, parts, containers, and supplies.....		(X)	24.2	(X)	18.4
976000	Materials, containers, and supplies, n.s.k. <sup>1</sup> .....		(X)	25.1	(X)	20.6

<sup>e</sup>10 to 30 percent of this item was estimated. (NA) Not available. (X) Not applicable.

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In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3172, these small establishments accounted for approximately 2.9 percent of payrolls and 3.2 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

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The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

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"Value added" avoids the duplication in the value of shipments figure which results from

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**Bureau of the Census**  
Washington, D.C. 20233

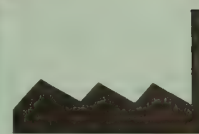
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# 1967 CENSUS OF MANUFACTURES



MC67(P)-31B-5

## INDUSTRY SERIES

### Leather goods, n.e.c.

SIC Code 3199

## preliminary report

The Leather Goods, Not Elsewhere Classified Industry includes establishments primarily engaged in manufacturing leather goods, not elsewhere classified, such as saddlery, harness, and whips; embossed leather goods; leather desk sets; and razor strops.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Leather Goods, N.E.C., Industry amounted to \$96.5 million, an increase of 44 percent compared with 1963. Value added by

manufacture at \$45.5 million in 1967 was 39 percent more than value added in 1963. Average employment in the industry showed an increase of 22 percent from 1963 to a total of 6.1 thousand employees in 1967.

Of the \$96.5 million total value of shipments and other receipts of establishments classified as leather goods, n.e.c., manufacturers, \$3.5 million were products primary to other industries; and \$13.5 million were receipts for miscellaneous activities. The industry shipments of primary products represented 96 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 94 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Special-ization ratio (per-cent)	Coverage ratio (per-cent)
	Total (number)	With 20 employ-ees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3199.--LEATHER GOODS, N.E.C.														
1967 Census....	366	83	6.1	26.5	5.3	10.0	19.0	45.5	50.8	96.5	1.4	12.4	96	87
1966 ASM <sup>1</sup> .....	(NA)	(NA)	6.3	23.8	5.3	10.1	18.1	48.1	45.2	90.9	*1.1	11.6	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	5.9	21.4	5.1	9.5	16.0	38.8	43.7	81.1	*1.2	11.0	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	5.1	20.1	4.3	9.0	14.5	35.6	36.8	72.4	*0.8	9.0	(NA)	(NA)
1963 Census....	370	67	5.0	18.7	4.2	8.5	13.7	32.7	34.8	67.1	0.8	9.5	94	82
1962 ASM <sup>1</sup> .....	(NA)	(NA)	5.1	20.4	4.2	8.6	14.3	36.9	35.1	72.0	*0.6	9.1	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	4.6	18.7	3.8	7.9	12.9	35.5	31.8	66.5	*0.7	8.7	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	5.2	18.5	4.3	9.7	13.6	34.3	32.1	66.4	(S)	8.4	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	5.7	19.2	4.9	9.3	14.0	34.0	31.1	64.5	(S)	8.8	(NA)	(NA)
1958 Census <sup>2</sup> ...	433	74	5.4	17.7	4.6	8.8	13.2	31.2	28.7	60.2	0.8	8.4	96	84

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

(S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 12 and 10, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued November 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary  
Rocco C. Siciliano, Under Secretary  
Harold C. Passer, Assistant Secretary for Economic Affairs  
**BUREAU OF THE CENSUS** George Hay Brown, Director

The total value of leather goods, n.e.c. shipped by all producers in 1967 was \$91.5 million of which \$79.5 million, or 87 percent, were shipped by plants classified in industry 3199, Leather Goods, n.e.c., while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 82 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
INDUSTRY 3199.--LEATHER GOODS, N.E.C.													
United States, total.....	366	83	6.1	26.5	5.3	10.0	19.0	45.5	50.8	96.5	1.4	5.0	32.7
New England.....	29	6	0.4	1.5	0.3	0.5	0.9	3.0	2.8	5.6	0.3	0.5	3.3
Middle Atlantic.....	123	30	1.8	8.9	1.6	3.1	6.3	14.8	15.2	29.9	0.3	1.5	10.0
New York.....	99	25	1.5	7.6	1.3	2.6	5.4	12.7	12.4	25.0	(D)	1.2	8.3
New Jersey.....	10	1	0.1	0.3	0.1	0.1	0.2	0.5	0.4	0.9	(Z)	(D)	(D)
Pennsylvania.....	14	4	0.2	1.0	0.2	0.4	0.7	1.7	2.3	3.9	(D)	0.2	1.4
East North Central....	43	11	0.8	3.7	7	1.3	2.4	6.0	6.0	12.0	0.1	0.6	4.2
Ohio.....	14	1	0.1	0.5	0.1	0.2	0.3	0.9	0.7	1.6	(Z)	0.1	0.7
Illinois.....	20	9	0.6	2.9	0.6	1.0	1.9	4.7	4.8	9.5	(Z)	0.5	3.0
West North Central....	18	5	0.3	1.4	0.3	0.5	0.9	2.4	2.1	4.4	(Z)	0.2	0.9
South Atlantic.....	22	7	1.0	3.5	0.9	1.6	2.9	5.3	7.7	13.2	0.1	0.7	3.7
East South Central..	18	7	0.8	3.0	0.7	1.3	2.3	5.2	7.8	13.2	0.1	0.5	3.9
West South Central....	38	4	0.3	1.2	0.3	0.5	0.9	2.5	3.4	6.1	(Z)	0.4	2.9
Texas.....	29	4	0.2	1.0	0.2	0.4	0.8	2.1	2.9	5.1	(Z)	0.4	2.4
Mountain.....	23	7	0.3	1.3	0.2	0.4	0.8	2.6	2.2	4.9	(Z)	(D)	(D)
Colorado.....	12	5	0.2	0.9	0.1	0.2	0.6	1.9	1.7	3.6	(Z)	0.2	1.3
Pacific.....	52	6	0.4	2.1	0.4	0.7	1.4	3.6	3.7	7.3	0.2	(D)	(D)
California.....	42	5	0.4	1.9	0.4	0.7	1.3	3.2	3.4	6.6	0.2	0.3	2.0

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Value of shipments including interplant transfers (million dollars)	
		1967	1963
3199- --	LEATHER GOODS, N.E.C., TOTAL <sup>1</sup> .....	91.5	67.1
31990 11	Leather novelties.....	16.8	13.2
31990 31	Saddlery and harness and accouterments.....	26.4	21.4
31990 98	Other leather goods (desk sets, holsters, dog collars, leashes, etc.).....	23.2	21.0
31990 00	Leather goods, n.s.k. (Represents companies with 10 or more employees. See Note.).....	13.7	11.6
31990 02	Leather goods, n.s.k. (Represent companies with less than 10 employees. See Note.).....	11.4	

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind.

<sup>1</sup>The products of this industry only include leather goods that are not classified in other industries. (See Text.)

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3199.--LEATHER GOODS, N.E.C.					
	Materials, containers, and supplies, total.....		(X)	42.7	(X)	29.8
311100	Finished leather.....	Million sq. ft...	21.4	12.7	18.7	10.4
970099	Other materials, parts, containers, and supplies.....		(X)	15.1	(X)	10.8
976000	Materials, containers, and supplies, n.s.k. <sup>1</sup> .....		(X)	14.9	(X)	8.5

n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>This item represents the total cost of materials etc.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3199, these small establishments accounted for approximately 10 percent of payrolls and 13 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.

# Appendix

## EXPLANATION OF TERMS

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A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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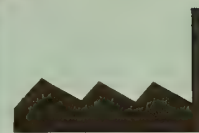








# 1967 CENSUS OF MANUFACTURES



MC67(P)-32A-1

## INDUSTRY SERIES

**preliminary  
report**

### Flat glass

SIC Code 3211

The Flat Glass Industry includes establishments primarily engaged in manufacturing flat glass. This industry also produces laminated glass, but establishments primarily engaged in manufacturing laminated glass from purchased flat glass are classified in industry 3231.

The classification of establishments for which data are tabulated in this report is based upon

the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Flat Glass Industry amounted to \$611.3

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(per-cent)	(per-cent)
INDUSTRY 3211, --FLAT GLASS														
1967 Census....	64	39	23.9	196.6	19.8	40.2	157.6	422.9	194.7	611.3	59.9	93.1	<sup>90</sup>	(D)
1966 ASM <sup>1</sup> .....	(NA)	(NA)	24.9	205.9	21.0	43.8	169.5	431.2	205.2	638.1	74.4	89.7	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	25.3	205.3	21.5	45.5	171.7	461.7	216.7	676.5	40.6	87.1	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	22.5	178.7	19.1	41.6	149.4	382.5	195.0	569.5	22.3	81.4	(NA)	(NA)
1963 Census....	31	30	22.8	172.2	19.4	39.7	143.8	364.5	185.9	549.4	28.2	72.7	<sup>90</sup>	(D)
1962 ASM <sup>1</sup> .....	(NA)	(NA)	22.4	162.6	19.1	38.8	136.0	315.2	176.2	490.7	34.0	71.7	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	21.2	146.2	17.9	35.5	120.7	284.6	164.7	448.5	39.0	69.1	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	23.5	167.6	20.0	41.5	140.2	345.2	180.5	529.8	36.1	70.7	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	27.3	180.6	23.8	47.0	156.0	400.5	174.9	557.4	18.9	78.5	(NA)	(NA)
1958 Census <sup>2</sup> ...	32	31	21.2	133.6	17.6	35.9	110.7	263.2	115.1	384.7	21.6	55.2	<sup>90</sup>	(D)

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals. (NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

<sup>3</sup>This is a minimum percentage. The exact figure cannot be shown without disclosing figures for individual companies.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary****Rocco C. Siciliano, Under Secretary****BUREAU OF THE CENSUS George Hay Brown, Director**

million, an increase of 11 percent compared with 1963. Value added by manufacture at \$422.9 million in 1967 was 16 percent more than value added in 1963. Average employment in the industry showed an increase of 5 percent from

1963 to a total of 23.9 thousand employees in 1967.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3211, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MQ-32A, Flat Glass.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967										1963		
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
	INDUSTRY 3211, --FLAT GLASS												
United States, total.....	64	39	23.9	196.6	19.8	40.2	157.6	422.9	194.7	611.3	59.9	22.8	364.5
North Central.....	22	12	8.5	75.8	7.3	15.1	62.8	176.9	64.4	238.7	29.2	8.4	162.2
South.....	20	16	9.6	75.8	7.8	15.8	59.8	161.2	63.5	221.1	13.9	(D)	(D)
West South Central..	8	5	2.0	16.4	1.6	3.3	13.1	26.3	10.0	36.7	1.0	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	1967			1963		
			Production for all purposes (quantity)	Total shipments and interplant transfers		Production for all purposes (quantity)	Total shipments and interplant transfers	
				Quantity	Value (million dollars)		Quantity	Value (million dollars)
3211- --	FLAT GLASS, TOTAL <sup>1</sup> .....	.....	(X)	(X)	810.9	(X)	(X)	733.1
32111 --	Sheet (window) glass, total <sup>2</sup> : As reported in the census of manufactures.....	1,000 boxes 50 sq. ft. each single strength or equiv.	(X)	(X)	133.2	} 26.2	} 25.0	} 141.5
	As reported on census quarterly report Form MQ-32A.....	..do.....	21.9	<sup>2</sup> 21.3	<sup>2</sup> 131.6			
	Uncolored:							
32111 22	Single strength.....	..do.....	9.8	9.8	56.7	10.5	10.9	56.6
32111 23	Double strength, including greenhouse.....	..do.....	4.3	4.1	26.8	4.8	4.8	29.9
32111 24	Heavy sheet.....	..do.....	6.3	6.0	37.0	9.2	7.7	43.3
32111 26	Thin, including picture glass and tinted or colored (all thicknesses).....	..do.....	1.5	1.3	11.0	1.6	1.5	11.6
32112 00	Plate and float glass.....	Million sq. ft....	(X)	(X)	183.3	} 71.7	} 476.2	} 175.8
32114 --	Other flat glass, made from glass produced in the same establishment:							
32114 11	Rolled and wire glass <sup>3</sup> .....	..do.....	(X)	(X)	22.0	} 102.5	} 185.4	} 98.5
32114 21	Tempered glass for automotive use.....	..do.....						
32114 23	Tempered glass for architectural and construction purposes including glass for shower doors and entrance doors.....	..do.....	(X)	(S)	<sup>4</sup> 102.5	} (X)	} 185.4	} 98.5
32114 29	Tempered glass for other uses such as for appliances.....	..do.....						
32114 98	Other flat glass (such as plate glass blanks, bent or enameled sheet, plate, float, and rolled glass; glass doors and tub enclosures (other than tempered), multiple-glazed, sealed insulating units, etc.).....	..do.....	(X)	21.9	5.6			
32112 13	Plate and float glass and rolled and wire glass as reported on census quarterly report Form MQ-32A, total.....	..do.....	830.7	547.2	<sup>2</sup> 200.5	} (NA)	} (NA)	} (5)
32112 15	Plate and float glass not over 1/8 inch in thickness.....	..do.....	381.3	282.5	89.8			
32112 17	Plate and float glass, over 1/8 inch, but not over 1/4 inch in thickness.....	..do.....	378.9	210.4	85.6	} (NA)	} (NA)	} (5)
32114 11	Plate and float glass, over 1/4 inch in thickness, and rolled and wire glass.....	..do.....	70.5	54.2	25.1			
32113 --	Laminated glass, total <sup>6</sup> .....	.....	(X)	210.5	361.7	(X)	188.0	317.3
32113 11	Laminated plate 1/4 inch and under.....	Million sq. ft....	(X)	190.0	342.0	(X)	163.8	295.3
32113 31	Laminated plate over 1/4 inch.....	..do.....						
32113 51	Laminated sheet (window) glass.....	..do.....	(X)	20.5	19.7	(X)	25.2	22.0
32113 98	Other laminated glass.....	..do.....						
32110 00	Flat glass not specified by kind (For companies with 10 or more employees. See Note.).....	..do.....	(X)	(X)	2.4	(X)	(X)	-
32110 02	Flat glass not specified by kind (For companies with less than 10 employees. See Note.).....	..do.....	(X)	(X)	0.2	(X)	(X)	(NA)

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

- Represents zero. (S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review. (X) Not applicable.

<sup>1</sup>Includes laminated glass (product codes 3211311-3211371 and 3231311-3231398).

<sup>2</sup>Detail does not add to total due to independent rounding.

<sup>3</sup>Includes glass of which one or both surfaces are roughed, figured, ribbed or otherwise impressed. Excludes glass block and tile.

<sup>4</sup>Combined to avoid disclosing figures of individual companies.

<sup>5</sup>Detail not available in 1963. Total equals \$175.8 million as reported above.

<sup>6</sup>Includes laminated glass made in the Flat Glass Industry (3211) and laminated glass made in products of purchased glass industry (3231) combined to avoid disclosing figures of individual companies. For 1963, no production or shipments of "Laminated plate, over 1/4 inch," (code 3211331), "Laminated sheet (window) glass" (code 3211351) or "Other laminated glass" (code 3211371) were reported in the Flat Glass Industry (3211). The same is true for 1967, except that a small amount of "Laminated plate over 1/4 inch" (code 3211331) was produced in the Flat Glass Industry (3211).

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
INDUSTRY 3211.--FLAT GLASS						
	Materials, containers, and supplies, total.....		(X)	157.6	(X)	146.0
281228	Sodium carbonate (soda ash) (98-100% Na <sub>2</sub> CO <sub>3</sub> ).....	1,000 short tons..	386.5	13.5	398.8	13.5
144301	Glass sand, all types.....	..do.....	1,495.0	7.8	1,880.6	8.6
281976	Sodium sulfate (including salt cake).....	..do.....	(S)	(S)	67.6	2.1
321121	Plate glass.....	Million sq. ft....	45.1	15.4	87.6	19.0
321111	Sheet glass.....	..do.....	20.1	4.6	15.2	2.6
Refractories:						
325501	Clay.....	1,000 short tons..	13.8	3.0	14.4	2.6
329701	Nonclay.....	..do.....			9.8	1.6
999816	Cullet (glass scrap).....	Million lbs.....	487.1	3.8	998.1	7.5
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	107.0	(X)	88.5
972000	All other materials, containers and supplies, n.s.k.....		(X)	2.5	(X)	(X)

n. s. k. Not specified by kind. (S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review. (X) Not applicable.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3211, these small establishments accounted for approximately 0.05 percent of payrolls and 0.02 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

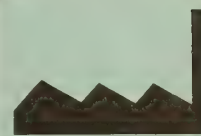
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-32A-2

## INDUSTRY SERIES

### Glass containers

SIC Code 3221

preliminary  
report

The Glass Containers Industry includes establishments primarily engaged in manufacturing glass containers for commercial packing and bottling, and for home canning.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Glass Containers Industry amounted to \$1,353.1 million, an increase of 35 percent

compared with 1963. Value added by manufacture at \$842.9 million in 1967 was 34 percent more than value added in 1963. Average employment in the industry showed an increase of 11 percent from 1963 to a total of 66.7 thousand employees in 1967.

Of the \$1,353.1 million total value of shipments and other receipts of establishments classified as glass containers, \$5.5 million were products primary to other industries; and \$19.3 million were receipts for miscellaneous activities. The industry shipments of primary products represented 99 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 99 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Special-ization ratio (per-cent)	Coverage ratio (per-cent)
	Total (number)	With 20 employ-ees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3221.—GLASS CONTAINERS														
1967 Census....	120	112	66.7	426.1	59.4	119.4	362.3	842.9	489.1	1,353.1	75.5	154.2	99	99
1966 ASM <sup>1</sup> .....	(NA)	(NA)	64.5	391.3	57.4	115.1	332.4	763.1	460.9	1,207.5	116.8	172.1	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	61.5	358.3	54.8	109.0	303.4	679.4	418.3	1,091.8	72.3	151.9	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	60.4	340.9	53.8	108.8	279.7	646.6	414.4	1,055.9	59.5	143.6	(NA)	(NA)
1963 Census....	113	105	60.0	328.0	53.5	107.1	278.7	629.6	392.5	1,004.5	53.8	137.3	99	99
1962 ASM <sup>1</sup> .....	(NA)	(NA)	60.0	326.7	53.3	106.9	276.0	613.0	375.5	987.6	53.6	124.0	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	60.2	314.5	53.7	106.6	265.1	601.2	366.7	967.4	68.9	125.7	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	58.5	298.3	52.0	104.3	251.4	567.5	375.2	939.2	34.8	122.3	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	56.2	271.9	50.1	98.8	228.9	561.3	354.6	915.6	32.9	110.5	(NA)	(NA)
1958 Census <sup>2</sup> ....	100	92	54.9	259.9	48.6	97.6	218.4	532.5	333.6	862.1	31.2	106.9	99	99

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued September 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary  
Rocco C. Siciliano, Under Secretary  
BUREAU OF THE CENSUS

The total value of glass containers shipped by all producers in 1967 was \$1,336.0 million of which \$1,328.3 million, or 99 percent, were shipped by plants classified in industry 3221, Glass Containers, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 99 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3221, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

M32G, Glass Containers.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

(See appendix, "Explanation of Terms.")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture  (million dollars)	Cost of materials  (million dollars)	Value of shipments  (million dollars)	Capital expenditures, new  (million dollars)	All employees  (1,000)	Value added by manufacture  (million dollars)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
	INDUSTRY 3221.—GLASS CONTAINERS												
United States, total.....	120	112	66.7	426.1	59.4	119.4	362.3	842.9	489.1	1,353.1	75.5	60.0	629.6
South.....	36	34	16.5	104.5	14.6	29.7	86.9	215.4	124.0	348.4	14.9	(D)	(D)
Middle Atlantic.....	34	31	21.2	132.1	18.8	36.8	112.2	265.4	146.3	414.0	(D)	19.8	199.8
North Central.....	29	27	19.5	122.7	17.6	35.8	106.0	232.0	141.9	377.2	21.8	(D)	(D)
Ohio.....	4	3	1.8	10.9	1.7	3.3	10.0	20.1	11.9	31.7	(D)	(D)	(D)
Illinois.....	11	11	9.6	61.6	8.7	17.5	53.1	117.0	69.3	188.7	(D)	(D)	(D)
South Atlantic.....	18	17	10.2	66.1	9.0	18.5	54.9	138.6	79.0	225.0	9.4	9.1	90.6
Texas.....	5	5	2.0	13.5	1.8	3.8	11.6	29.3	15.5	45.8	(D)	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	1967			1963		
			Production for all purposes (quantity)	Total shipments, including interplant transfers		Production for all purposes (quantity)	Total shipments, including interplant transfers	
				Quantity	Value (million dollars)		Quantity	Value (million dollars)
3221- --	GLASS CONTAINERS, TOTAL.....		(X)	(X)	1,336.0	(X)	(X)	982.4
	Machine-made for domestic shipments:							
	Narrow neck:							
32210 11	Food.....	Million gross.....						
32210 13	Medicinal and health supplies.....	do.....	55.5	{	24.9	54.9	{	19.2
32210 15	Chemical, household, and industrial.....	do.....			18.0			16.7
32210 17	Toiletries and cosmetics.....	do.....			5.4			7.4
32210 19	Beverage, returnable.....	do.....			11.6			10.6
32210 21	Beverage, nonreturnable.....	do.....	13.1		13.5	13.5		12.3
32210 23	Beer, returnable.....	do.....	25.9		24.8	4.0		3.9
32210 25	Beer, nonreturnable.....	do.....	4.6		4.3	2.9		2.7
32210 27	Liquor.....	do.....	40.1		40.9	27.1		26.7
32210 29	Wine.....	do.....	14.7		14.2	11.9		11.0
	Wide mouth:		6.0		6.2	5.3		5.2
32210 31	Food, including packers' tumblers, fruit jars and jelly glasses.....	do.....	63.9	{	58.0	60.5	{	49.2
32210 32	Medicinal and health supplies.....	do.....			6.3			4.9
32210 33	Chemical, household, and industrial.....	do.....			1.2			1.5
32210 34	Toiletries and cosmetics.....	do.....			2.5			3.5
32210 37	Dairy products.....	do.....	1.0		1.0	1.6		1.5
32210 62	Export shipments, machine-made (all types).....	do.....	(X)		1.9	(X)		1.6
32210 71	Net weight of machine-made glass containers packed..	Million lbs.	(X)		17,731.8	(X)		12,856.7
32210 54	Hand-made, all types, domestic and export.....	Million gross.....	(X)		(X)	(X)		(X)
32210 00	Glass containers, n.s.k. (For companies with 10 or more employees. See Note).....	do.....	(X)		(X)	(X)		(X)
32210 02	Glass containers, n.s.k. (For companies with less than 10 employees. See Note.).....	do.....	(X)		(X)	(X)		0.9

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind. (X) Not applicable. (Z) Less than 0.1 when rounded.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3221.--GLASS CONTAINERS					
	Materials, containers, and supplies, total.....		(X)	412.9	(X)	315.9
281228	Sodium carbonate (soda ash) (98-100% Na <sub>2</sub> CO <sub>3</sub> ).....	1,000 short tons.	1,974.8	70.0	1,623.9	58.1
144301	Glass sand.....	do.....	7,121.4	36.6	4,724.6	26.9
	Refractories:					
325501	Clay.....	do.....	(S)	3.6	(S)	2.7
329701	Nonclay.....	do.....	(S)	1.7	(S)	3.1
265301	Corrugated paperboard shipping containers.....	1,000 short tons.	(X)	152.0	(X)	100.5
265019	All other paperboard containers and boxes.....	do.....	(X)	9.6		
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	133.0	(X)	124.7
972000	Materials not specified.....		(X)	6.9	(X)	(X)

(S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review.



## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3221, these small establishments accounted for approximately 0 percent of payrolls and .01 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.

# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# CURRENT INDUSTRIAL REPORTS

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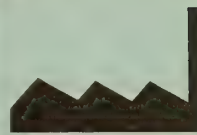
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# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

## preliminary report

### Pressed and blown glass, n.e.c.

SIC Code 3229

The Pressed and Blown Glass and Glassware, Not Elsewhere Classified, Industry includes establishments primarily engaged in manufacturing glass and glassware not elsewhere classified, pressed, blown, or shaped from glass produced in the same establishment. Establishments primarily engaged in manufacturing textile glass fibers are also included in this industry, but establishments primarily engaged in manufacturing glass wool insulation products are classified in industry 3296. Establishments primarily engaged in the production of pressed lenses for vehicular lighting, beacons, and lanterns are also included in this industry, but establishments primarily engaged in the production of optical lenses are classified in industry 3831. Establishments primarily engaged in manufacturing glass containers are classified in industry 3221,

and complete electric light bulbs in industry 3641.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Pressed and Blown Glass, N.E.C., Industry amounted to \$886.9 million, an increase of 41 percent compared with 1963. Value added by manufacture at \$659.1 million in 1967 was 40 percent more than value added in 1963. Average employment in the industry showed an increase of 12 percent from 1963 to a total of 42,5 thousand employees in 1967.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
INDUSTRY 3229. --PRESSED AND BLOWN GLASS, N.E.C.														
1967 Census....	185	113	42.5	262.3	36.5	72.2	211.6	659.1	237.3	886.9	81.9	128.6	97	98
1966 ASM <sup>1</sup> .....	(NA)	(NA)	43.2	266.5	37.9	76.3	222.2	708.7	233.8	926.6	92.5	120.0	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	39.8	232.4	34.7	68.7	191.1	569.2	220.5	787.7	54.7	105.5	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	38.4	216.5	32.7	65.9	175.7	529.8	211.0	731.0	38.8	101.6	(NA)	(NA)
1963 Census....	107	95	38.0	207.3	33.1	64.9	167.9	472.2	167.5	630.9	22.7	95.4	96	97
1962 ASM <sup>1</sup> .....	(NA)	(NA)	38.1	199.7	33.1	64.7	161.2	448.1	174.5	619.5	24.4	89.0	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	37.4	190.4	32.4	62.7	153.8	425.3	163.9	584.8	27.6	89.9	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	37.1	181.8	34.3	67.5	162.1	408.8	173.3	568.9	41.8	85.8	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	38.0	184.0	33.4	65.8	152.3	398.6	151.8	547.5	*33.8	69.5	(NA)	(NA)
1958 Census <sup>2</sup> ...	140	98	35.4	161.3	30.5	59.0	131.9	312.3	128.9	445.4	19.4	62.9	98	97

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary  
Rocco C. Siciliano, Under Secretary  
BUREAU OF THE CENSUS George Hay Brown, Director



Of the \$886.9 million total value of shipments and other receipts of establishments classified as pressed and blown glass, n.e.c., \$25.6 million were products primary to other industries; and \$2.9 million were receipts for miscellaneous activities. The industry shipments of primary products represented 97 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 96 percent in 1963.

The total value of pressed and blown glass, n.e.c., shipped by all producers in 1967 was \$878.6 million of which \$858.4 million, or 98 per-

cent, were shipped by plants classified in industry 3229, Pressed and Blown Glass, N.E.C., while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 97 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3229, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-32E, Consumer, Scientific, Technical, and Industrial Glass-ware.

MA-32J, Fibrous Glass.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture  (million dollars)	Cost of materials  (million dollars)	Value of shipments  (million dollars)	Capital expenditures, new  (million dollars)	All employees  (1,000)	Value added by manufacture  (million dollars)
	Total  (number)	With 20 employees or more (number)	Number  (1,000)	Payroll  (million dollars)	Number  (1,000)	Man-hours  (millions)	Wages  (million dollars)						
	INDUSTRY 3229. --PRESSED AND BLOWN GLASS, N.E.C.												
United States, total.....	185	113	42.5	262.3	36.5	72.2	211.6	659.1	237.3	886.9	81.9	38.0	472.2
Middle Atlantic.....	59	33	11.6	75.6	9.9	19.6	60.1	203.1	66.0	264.6	(D)	11.3	117.6
North Central.....	42	28	14.9	93.6	12.6	24.6	75.7	244.8	78.6	320.3	19.1	(D)	(D)
Ohio.....	22	19	10.8	68.8	9.0	17.9	55.3	148.5	55.0	202.5	(D)	(D)	(D)
Illinois.....	10	3	0.2	1.0	0.1	0.3	0.8	1.4	1.3	2.7	(D)	(D)	(D)
South.....	69	47	14.3	81.9	12.6	25.0	67.1	186.0	82.8	266.9	36.1	(D)	(D)
South Atlantic.....	46	37	11.6	65.8	10.3	20.4	54.5	145.8	68.6	213.8	32.8	10.1	130.3

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers					
			1967		1963			
			Quantity	Value (million dollars)	Quantity	Value (million dollars)		
3229- --	PRESSED AND BLOWN GLASS, N.E.C., TOTAL: As reported in the census of manufactures..... As reported on Census Annual Forms MA-32E and MA-32J.....		(X) (X)	878.6 885.1	(X) (X)	615.1 609.6		
32291 --	Table, kitchen, art, and novelty glassware, total: As reported in the census of manufactures..... As reported on Census Annual Form MA-32E.....		(X) (X)	266.9 272.3	(X) (X)	220.3 216.2		
	Machine-made:							
32291 21	Tumblers (one-piece, excluding packers' tumblers).....	Million dozen..	66.4	69.4	60.4	63.7		
32291 22	Stemware.....	..do.....	8.0	19.8				
32291 23	Tableware.....	Million pieces.	334.1	107.1				
32291 25	Cookware, ovenware, and kitchenware.....	..do.....		(X)	106.2			
32291 28	Ornamental, decorative, novelty glassware and smokers' accessories.....			(X)	25.7	7.9	13.3	
	Hand-made:							
32291 31	Tumblers.....	Million dozen..	}	(D)	(D)	2.1	12.6	
32291 32	Stemware.....	..do.....		(D)	(D)	0.5	6.4	
32291 33	Tableware.....	..do.....		(D)	(D)	(X)	14.0	
32291 38	Other, including ornamental, decorative, and novelty glassware, and smokers' accessories.....		(X)	(D)	(X)			
32292 --	Lighting and electronic glassware, total: As reported in the census of manufactures..... As reported on Census Annual Form MA-32E.....		(X) (X)	328.9 338.8	(X) (X)	210.3 210.3		
32292 21	Automotive lighting glassware.....		(X)	17.1	(X)	22.9		
32292 23	Searchlight and other lenses.....		(X)	4.1				
32292 31	Electronic-tube blanks.....		(D)	(D)			(X)	6.8
32292 27	Tubing and cane for electric light bulbs and fluorescent and neon lighting.....		(X)	31.7	}	158.9		
32292 25	Electric light bulb blanks.....		(X)	(D)				
32292 35	Television tube blanks and parts; and tubing, cane, and other glass parts for electronic tubes and devices.....							
	Bowls and enclosing globes, lamp chimneys, lamp parts, shades, reflectors, torchiers, and other interior and exterior lighting:							
32292 37	Interior.....		(X)	24.7	(X)	21.7		
32292 39	Exterior.....		(X)	8.2				
Product code	Product		1967		1963			
			Production for all purposes <sup>1</sup> (million pounds)	Total shipments, including interplant transfers		Production for all purposes <sup>1</sup> (million pounds)	Total shipments, including interplant transfers	
				Quantity <sup>1</sup> (million pounds)	Value (million dollars)		Quantity <sup>1</sup> (million pounds)	Value (million dollars)
3229- --	PRESSED AND BLOWN GLASS, N.E.C.--Continued							
32293 --	Textile type fiber, total: As reported in the census of manufactures..... As reported on Census Annual Form MA-32J.....	(X) 304.9	(X) 306.9	138.1 136.8	(X) 200.0	(X) 191.9	91.6 91.1	
32293 23	Roving chopped strand and milled fiber.....	122.0	118.7	37.6	57.0	57.4	19.6	
32293 21	Yarn, strand, staple yarn, and sliver.....	182.9	188.1	99.2	143.0	134.5	71.5	
32293 25	Mat.....							
32293 29	Other textile type fiber.....							
32294 --	All other pressed and blown glassware, total: As reported in the census of manufactures..... As reported on Census Annual Form MA-32E.....	(X) (X)	(X) (X)	137.5 137.2	(X) (X)	(X) (X)	92.5 92.0	
32294 21	Tubing, rod, and canes, all types (except electrical and electronic).....	(X)	(X)	(D)	(X)	(X)	73.3	
32294 23	Scientific and laboratory glassware.....	(X)	(X)	(D)				
32294 25	Industrial and technical glassware.....	(X)	(X)	33.2				
32294 27	Ophthalmic lens blanks and optical instrument lens blanks.....	(X)	(X)	(D)	(X)	(X)	18.7	
32294 29	Other glassware.....	(X)	(X)	30.1				

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of Shipments")

Product code	Product	1967			1963		
		Production for all purposes <sup>1</sup> (million pounds)	Total shipments, including interplant transfers		Production for all purposes <sup>1</sup> (million pounds)	Total shipments, including interplant transfers	
			Quantity <sup>1</sup> (million pounds)	Value (million dollars)		Quantity <sup>1</sup> (million pounds)	Value (million dollars)
3229- --	PRESSED AND BLOWN GLASS, N.E.C.—Continued						
32290 00	Pressed and blown glass, n.e.c. (For companies with 10 or more employees. See Note.).....	(X)	(X)	5.3	(X)	(X)	0.4
32290 02	Pressed and blown glass, n.e.c. (For companies with less than 10 employees. See Note.).....	(X)	(X)	1.9	(X)	(X)	(X)

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or from related figures. n.e.c. Not elsewhere classified.

(X) Not applicable.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3229---PRESSED AND BLOWN GLASS, N.E.C.					
	Materials, containers, and supplies, total.....		(X)	185.5	(X)	130.5
281228	Sodium carbonate (soda ash) (98-100% Na <sub>2</sub> CO <sub>3</sub> ).....	1,000 short tons.	235.9	8.0	148.3	5.3
144301	Glass sand.....	do.....	1,267.4	9.6	767.2	5.8
281976	Sodium sulfate (including salt cake).....	do.....	(S)	(S)	14.5	0.9
321121	Plate glass.....	Million sq. ft..	(S)	(S)		
321111	Sheet glass.....	do.....	(S)	(S)		
322911	Glass tumblers, stemware, and other tableware.....	do.....	(S)	(S)	(X)	1.2
322901	Other glass products.....	do.....	(D)	(D)		
	Refractories:					
325501	Clay.....	1,000 short tons.	15.2	4.6	8.0	1.7
329701	Nonclay.....	do.....	(S)	(S)	(S)	1.1
265301	Corrugated paperboard shipping containers.....	do.....	(X)	28.1	(X)	23.6
999816	Cullet (glass scrap).....	Million lbs.....	511.4	7.2	417.6	6.4
970099	All other materials and components, parts, containers, and supplies consumed.....	do.....	(X)	100.5	(X)	84.5
973000	All other materials, containers, and supplies, n.s.k.....	do.....	(X)	(D)	(X)	-

(D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or from related figures. n.s.k. Not specified by kind.

(S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review. (X) Not applicable.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In Industry 3229, these small establishments accounted for approximately 0.2 percent of payrolls and 0.2 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

# 1967 CENSUS OF MANUFACTURES

MC67(P)-32A-4

## INDUSTRY SERIES

**preliminary  
report**

### Products of purchased glass

SIC Code 3231

The Glass Products made of Purchased Glass, Industry includes establishments primarily engaged in manufacturing glass products from purchased glass. Establishments primarily engaged in manufacturing optical lenses and ophthalmic lenses are classified in Major Group 38.

the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Products of Purchased Glass Industry amounted to \$791.9 million, an increase of 26 percent compared with 1963. Value added by manufacture at \$388.3 million in 1967 was 25 percent more than value added in 1963. Average employment in the industry showed an increase of 9 percent from 1963 to a total of 28,5 thousand employees in 1967.

The classification of establishments for which data are tabulated in this report is based upon

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3231.--PRODUCTS OF PURCHASED GLASS														
1967 Census....	890	261	28.5	178.6	23.3	46.1	131.6	388.3	404.1	791.9	21.8	132.5	<sup>90</sup>	(D)
1966 ASM <sup>1</sup> .....	(NA)	(NA)	29.6	179.9	24.4	48.9	131.7	376.1	392.3	754.1	42.8	119.8	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	28.7	164.3	23.8	47.6	122.6	369.9	358.2	722.0	19.5	105.7	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	26.6	150.0	22.0	44.3	111.5	323.3	335.1	644.1	40.8	101.5	(NA)	(NA)
1963 Census....	1,044	249	26.2	138.3	21.7	43.4	103.9	309.7	320.3	627.3	13.2	88.9	<sup>90</sup>	(D)
1962 ASM <sup>1</sup> .....	(NA)	(NA)	27.7	138.1	22.9	44.9	103.5	301.5	268.7	562.6	18.5	89.7	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	27.0	127.7	22.2	43.1	95.1	286.9	247.6	520.6	7.4	87.7	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	28.0	131.8	23.2	44.8	100.7	314.4	260.3	557.8	*13.6	80.2	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	28.6	135.3	24.4	46.8	105.3	311.1	293.2	581.1	*20.2	75.6	(NA)	(NA)
1958 Census <sup>2</sup> ....	1,031	239	24.0	109.6	19.7	38.1	83.1	242.7	226.0	468.8	16.5	59.7	<sup>98</sup>	<sup>81</sup>

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(D) Individual figures that are withheld are indicated with a (D). (NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 2 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

<sup>3</sup>This is a minimum percentage. The exact figure cannot be shown without disclosing figures of individual companies.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director

# COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3231, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-32E, Consumer, Scientific, Technical, and Industrial Glassware.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3231.--PRODUCTS OF PURCHASED GLASS													
United States, total.....	890	261	28.5	178.6	23.3	46.1	131.6	388.3	404.1	791.9	21.8	26.2	309.7
New England.....	41	13	1.3	7.3	1.1	2.2	5.3	13.3	9.5	22.7	0.4	1.2	10.5
Connecticut.....	11	8	0.8	4.7	0.7	1.4	3.5	8.4	5.0	13.2	0.2	0.7	6.0
Middle Atlantic.....	352	108	11.1	65.5	9.2	18.0	49.2	124.5	128.3	249.1	7.5	9.7	95.5
New York.....	176	44	3.7	20.7	3.1	6.0	15.5	42.3	27.3	69.2	4.4	3.8	33.4
New Jersey.....	96	37	3.1	18.6	2.6	5.3	13.7	32.5	22.5	54.6	1.6	3.0	26.9
Pennsylvania.....	80	27	4.2	26.2	3.4	6.7	20.0	49.7	78.5	125.3	1.5	3.0	35.2
East North Central....	186	63	9.9	71.2	8.0	15.9	53.2	171.8	183.5	359.2	7.6	9.2	145.5
Ohio.....	53	27	3.8	28.0	3.2	6.5	22.7	63.6	74.1	135.9	3.9	3.8	56.0
Illinois.....	64	18	2.8	19.6	2.2	4.4	14.6	46.2	49.6	102.2	1.9	2.4	40.2
Wisconsin.....	20	2	0.2	1.3	0.2	0.3	0.8	3.1	1.8	4.9	0.1	0.3	2.5
West North Central....	37	8	0.7	3.9	0.5	1.0	2.5	9.0	10.0	18.9	0.5	0.5	4.9
South Atlantic.....	81	28	3.1	16.3	2.6	5.2	11.5	40.9	46.4	86.7	3.7	2.7	20.4
Maryland.....	15	3	0.3	1.6	0.3	0.5	1.2	3.8	2.3	6.1	0.1	0.3	2.0
Virginia.....	7	7	0.8	4.5	0.7	1.5	3.0	14.4	14.6	29.2	(D)	0.6	4.5
West Virginia.....	17	3	0.5	2.4	0.4	0.7	1.9	6.5	4.3	10.0	(D)	0.4	2.7
North Carolina.....	13	6	1.0	4.7	0.8	1.6	3.4	9.9	18.8	28.6	0.2	0.8	6.6
Florida.....	20	4	0.2	1.2	0.2	0.4	0.8	3.0	3.6	6.5	(Z)	0.3	2.3
Mountain.....	9	1	0.1	0.5	0.1	0.1	0.4	0.9	1.2	2.2	0.1	0.1	1.2
Pacific.....	138	29	1.7	10.3	1.4	2.7	6.9	20.1	17.5	37.9	1.2	1.7	21.8
California.....	120	28	1.7	9.8	1.3	2.6	6.6	19.6	16.8	36.3	1.2	1.6	20.8

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (million sq. ft.)	Value (million dollars)	Quantity (million sq. ft.)	Value (million dollars)
3231- --	PRODUCTS OF PURCHASED GLASS, EXCEPT LAMINATED TOTAL <sup>1</sup> .....	(X)	577.8	(X)	412.0
32315 --	Mirrors, total.....	(X)	166.7	(X)	123.4
32315 11	Mirrors, framed (decorated and undecorated):				
32315 51	Plate glass.....	(S)	28.7	12.8	25.3
32315 51	Other glass.....	(S)	22.6	(S)	37.3
32315 61	Mirrors, unframed (decorated and undecorated):				
32315 63	Plate glass.....	40.4	29.6	45.5	36.0
32315 63	Other glass.....	30.5	12.5	32.2	16.0
32315 71	Automotive rearview mirrors.....	(X)	49.7	(X)	( <sup>2</sup> )
32315 00	Mirrors, n.s.k.....	(X)	23.6	(X)	8.8
32316 --	Other glass products, made of purchased glass, total.....	(X)	353.3	(X)	275.2
32316 21	Stained, leaded, and faceted glass, and colored glass slabs.....	(S)	6.2	(S)	6.9
32316 31	Glassware, etched, ornamented, bent, etc:				
32316 35	Tumblers, goblets, and other stemware.....	(S)	6.7	(X)	8.1
32316 36	Tableware (except tumblers, goblets, and other stemware), including tableware made from flat glass.....	(S)	3.3	(X)	6.2
32316 37	Other table, kitchen, art, and novelty glassware, such as cookware, ovenware, kitchenware, ornamental or decorative glassware, and smokers' accessories.....	(X)	18.7		
32316 38	Lighting and electronic glassware, such as tubing and cane for electric light bulbs and fluorescent and neon lighting; bowls and enclosing globes; and other interior and exterior lighting glassware. All other glassware (except flat glass products) including scientific, laboratory, industrial, or technical glassware; glass blocks and Christmas tree ornaments, etc.....	(X)	118.3	(X)	58.2
32316 71	Multiple-glazed, sealed insulating glass units.....	(X)	37.6	(X)	31.3
32316 81	Tempered glass for automotive use.....	86.3	59.1		
32316 83	Tempered glass for architectural and construction purposes, including glass for shower doors and entrance doors.....	(S)	18.8		
32316 89	Tempered glass for other uses such as for appliances.....	49.2	24.6	(X)	150.1
32316 98	Other glass products (except laminated glass, tempered glass, and mirrors), including such items as bent (except when made into tableware) or enameled sheet, plate, float, and rolled glass; shower doors and tub enclosures (except tempered); watch crystals.....	(X)	42.1		
32316 00	Other glass products made of purchased glass, n.s.k.....	(X)	17.9	(X)	14.4
32310 00	Products made of purchased glass, n.s.k. (For companies with 10 or more employees. See Note.).....	(X)	40.3		
32310 02	Products made of purchased glass, n.s.k. (For companies with less than 10 employees. See Note.).....	(X)	17.5	(X)	13.4
32113 --	Laminated glass, including safety glass, total <sup>3</sup> .....	210.5	361.7	188.0	317.3

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind. (X) Not applicable. (S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review.

<sup>1</sup>Total excludes product class 32313, laminated glass. See footnote 3.

<sup>2</sup>Separate data were not collected for automotive rearview mirrors for 1963. An indeterminate amount is included in product codes 3231511-3231563.

<sup>3</sup>Includes laminated glass made in the flat glass industry (3211) and the products of purchased glass industry 3231. Combined to avoid disclosing figures of individual companies.

TABLE 4. **Materials Consumed, by Kind: 1967 and 1963**

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3231.--PRODUCTS OF PURCHASED GLASS					
	Materials, containers, and supplies, total.....		(X)	356.6	(X)	281.0
321121	Plate glass.....	Million sq. ft...	367.3	138.8	293.7	104.9
321111	Sheet glass.....	do.....	337.5	61.7	255.9	47.9
322911	Glass tumblers, stemware, and other tableware.....		(X)	7.4	(X)	3.9
322901	Other glass products.....		(X)	24.5	(X)	14.7
265301	Corrugated paperboard shipping containers.....		(X)	7.9	(X)	4.5
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	90.2	(X)	76.1
973000	Materials, containers, and supplies, n.s.k.....		(X)	26.1	(X)	29.0

n.s.k. Not specified by kind. (X) Not applicable.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3231, these small establishments accounted for approximately 3 percent of payrolls and 3 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

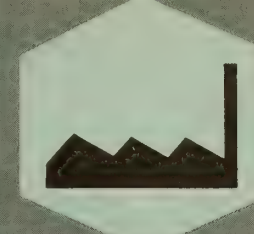
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-32B-1

## INDUSTRY SERIES

### preliminary report

## Cement, hydraulic

SIC Code 3241

The Cement, Hydraulic, Industry includes establishments primarily engaged in manufacturing hydraulic cement, including portland, natural, masonry, and pozzolan cements.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Cement, Hydraulic, Industry amounted to \$1,239.0 million, an increase of 5 percent compared with 1963. Value added by manufacture at \$810.0 million in 1967 was 3 percent more than value added in 1963. Average employment in the industry showed a decrease of 7 percent

from 1963 to a total of 32.4 thousand employees in 1967.

Of the \$1,239.0 million total value of shipments and other receipts of establishments classified as cement, hydraulic, \$8.5 million were products primary to other industries; and \$20.6 million were receipts for miscellaneous activities. The industry shipments of primary products represented 99 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 99 percent in 1963.

The total value of Cement, Hydraulic, shipped by all producers in 1967 was \$1,213.7 million of which \$1,210.0 million, or nearly 100 percent,

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3241.—CEMENT, HYDRAULIC														
1967 Census....	197	180	32.4	245.0	26.1	52.2	183.1	810.0	434.6	1,239.0	105.3	201.0	99	100
1966 ASM <sup>1</sup> .....	(NA)	(NA)	33.6	244.3	26.9	54.7	186.1	839.3	424.5	1,253.4	94.8	190.9	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	34.5	243.6	27.9	55.9	181.5	840.4	406.1	1,250.8	117.4	176.6	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	34.7	233.6	28.0	57.0	176.9	805.0	397.4	1,198.9	93.9	179.9	(NA)	(NA)
1963 Census....	188	179	34.9	227.4	28.7	57.6	173.9	785.7	388.7	1,176.9	120.8	180.6	99	100
1962 ASM <sup>1</sup> .....	(NA)	(NA)	35.5	220.9	29.7	59.1	171.1	771.8	360.4	1,131.1	96.7	179.6	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	36.4	218.1	30.5	60.5	170.6	752.9	355.4	1,107.9	100.2	180.0	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	39.4	227.9	33.2	66.7	180.2	760.8	366.8	1,112.3	114.3	186.4	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	41.1	229.8	35.0	71.2	183.0	815.1	379.5	1,191.0	119.4	171.9	(NA)	(NA)
1958 Census <sup>2</sup> ....	175	170	41.1	214.2	34.8	69.5	170.2	724.8	354.4	1,073.5	113.1	166.6	99	100

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director

was shipped by plants classified in industry 3241, Cement, Hydraulic, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was approximately 100 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1,

2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employ-ees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3241.--CEMENT, HYDRAULIC													
United States, total.....	197	180	32.4	245.0	26.1	52.2	183.1	810.0	434.6	1,239.0	105.3	34.9	785.7
Northeast.....	39	32	6.2	49.1	5.1	10.3	37.0	123.9	82.0	208.7	15.1	7.0	124.0
East North Central....	32	28	6.6	50.8	5.3	10.4	38.0	174.8	90.3	261.0	18.1	6.8	163.4
Ohio.....	8	8	1.6	11.3	1.2	2.3	7.7	34.3	13.2	48.0	1.9	1.8	37.3
Indiana.....	6	5	1.6	11.2	1.3	2.4	8.4	34.7	28.3	63.4	1.3	1.6	35.5
Illinois.....	4	4	0.9	6.8	0.8	1.6	5.7	24.1	9.9	32.8	(D)	1.1	28.2
Michigan.....	11	9	2.3	19.8	1.8	3.7	14.7	72.8	33.7	102.9	13.5	2.0	55.5
Wisconsin.....	3	2	0.2	1.7	0.2	0.4	1.4	8.8	5.2	13.8	(D)	0.3	7.0
West North Central....	21	21	3.9	27.8	3.2	6.2	21.7	103.0	43.5	144.7	11.1	4.3	100.1
Iowa.....	5	5	1.1	8.2	0.9	1.9	6.7	32.6	15.5	47.5	0.7	1.3	32.0
Missouri.....	7	7	1.3	9.1	1.0	1.8	6.5	38.4	14.8	52.3	8.1	1.3	31.4
South Atlantic.....	19	16	3.0	21.0	2.6	5.2	17.5	72.7	42.8	115.6	6.0	3.1	70.1
Maryland.....	3	3	0.6	4.3	0.6	1.0	3.7	12.8	6.7	20.1	0.6	0.6	14.7
Georgia.....	3	3	0.3	2.4	0.3	0.6	2.0	7.0	5.7	12.3	0.6	0.3	8.3
East South Central....	19	19	2.7	18.5	2.2	4.3	14.6	62.9	41.5	103.7	2.2	2.7	63.4
Alabama.....	10	10	1.4	9.3	1.1	2.2	7.3	32.3	26.7	58.1	1.8	1.3	30.3
West South Central....	31	29	4.3	30.3	3.2	6.6	20.5	117.2	55.1	170.5	31.0	4.0	109.3
Louisiana.....	4	4	0.6	4.8	0.5	1.0	3.4	13.7	9.5	23.1	1.1	(D)	(D)
Texas.....	22	20	2.9	20.1	2.2	4.6	13.8	76.6	35.1	110.5	28.8	2.6	69.9
Mountain.....	12	12	1.3	9.7	1.0	1.9	7.2	38.1	15.9	54.1	1.7	1.5	43.5
Pacific.....	24	23	4.5	37.8	3.6	7.3	26.6	117.3	63.5	180.7	20.1	5.4	111.9
Washington.....	6	6	0.5	4.1	0.4	0.8	2.7	11.8	9.4	21.1	(D)	0.6	9.9
California.....	14	13	3.6	30.1	2.8	5.7	21.4	95.4	46.1	141.9	7.9	4.3	93.1

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

**TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963**

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	1967			1963		
			Production for all purposes (quantity)	Total shipments, including interplant transfers		Production for all purposes (quantity)	Total shipments, including interplant transfers	
				Quantity	Value (million dollars)		Quantity	Value (million dollars)
3241- --	CEMENT, HYDRAULIC, TOTAL.....	.....	(X)	(X)	1,213.7	(X)	(X)	1,163.0
32410 11	Portland cement.....	Million bbls. of 376 lbs..	360.6	357.5	1,144.4	333.4	336.0	1,093.2
32410 31	Prepared or mixed hydraulic and masonry cements other than special portlands.....	Million bbls. of 280 lbs..	24.7	20.5	66.4	(S)	(S)	66.6
32410 51	Natural, masonry-natural, pozzolan (slag, lime), and hydraulic lime cements.....	Million bbls. of 376 lbs..	(D)	(D)	(D)	0.7	0.7	2.4
32410 00	Cement, hydraulic, n.s.k. (For companies with 10 or more employees. See Note.).....	.....	(X)	(X)	(D)	(X)	(X)	0.8
32410 02	Cement, hydraulic, n.s.k. (For companies with less than 10 employees. See Note.).....	.....	(X)	(X)	0.4	(X)	(X)	(X)

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or from related figures. n.s.k. Not specified by kind.

(S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review. (X) Not applicable.

**TABLE 4. Materials Consumed, by Kind: 1967 and 1963**

(See appendix, "Explanation of Terms")

Code	Material	1967		1963	
		Quantity (1,000 short tons)	Delivered cost (million dollars)	Quantity (1,000 short tons)	Delivered cost (million dollars)
	INDUSTRY 3241.-CEMENT, HYDRAULIC				
	Materials, containers, and supplies, total.....	(X)	221.1	(X)	195.8
264338	Paper shipping sacks and multiwall bags.....	(S)	16.8	376.0	18.1
320591	Refractories, clay and nonclay.....	74.1	10.7	(S)	7.1
142011	Crushed and broken stone, including cement rock, limestone, etc.....	28,195.0	42.8	}	167.6
970099	All other materials and components, parts, containers, and supplies consumed.....	(X)	142.6		
976000	Materials, containers, and supplies, n.s.k.....	(X)	8.2	(X)	3.0

n.s.k. Not specified by kind. (S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review. (X) Not applicable.



### SCOPE AND COVERAGE

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This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3241, these small establishments accounted for approximately 0.04 percent of payrolls and 0.02 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.

# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

**Textile mill products • Apparel and leather • Chemicals, rubber, and plastics • Machinery and equipment • Primary metals • Intermediate metal products • Processed foods • Lumber, furniture, and paper products • Stone, clay, and glass products.**

A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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**U. S. DEPARTMENT OF COMMERCE**  
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# 1967 CENSUS OF MANUFACTURES



MC67(P)-32B-2

## INDUSTRY SERIES

### Brick and structural clay tile SIC Code 3251

**preliminary  
report**

The Brick and Structural Clay Tile Industry includes establishments engaged primarily in manufacturing brick and structural clay tile. Establishments primarily engaged in manufacturing clay firebrick are classified in industry 3255, nonclay firebrick in industry 3297, sand lime brick in industry 3299, and glass brick in industry 3229.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Brick and Structural Clay Tile Industry amounted to \$361.7 million, an increase of 13 per-

cent compared with 1963. Value added by manufacture at \$251.1 million in 1967 was 16 percent more than value added in 1963. Average employment in the industry showed a decrease of 4 percent from 1963 to a total of 27.5 thousand employees in 1967.

Of the \$361.7 million total value of shipments and other receipts of establishments classified as brick and structural clay tile, \$8.6 million were products primary to other industries; and \$14.3 million were receipts for miscellaneous activities. The industry shipments of primary products represented 98 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was also 98 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3251.—BRICK AND STRUCTURAL CLAY TILE														
1967 Census....	484	364	27.5	144.0	23.4	48.0	110.0	251.1	114.8	361.7	27.1	60.8	98	99
1966 ASM <sup>1</sup> .....	(NA)	(NA)	29.4	149.3	25.3	53.1	117.3	274.9	123.4	386.8	25.5	61.9	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	29.9	145.0	25.7	53.2	113.8	264.3	120.6	384.7	26.4	49.1	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	29.2	134.8	25.0	52.8	105.7	258.4	106.8	365.9	*19.4	49.7	(NA)	(NA)
1963 Census....	512	400	28.6	130.4	24.7	51.2	102.6	216.5	106.0	325.1	19.3	48.0	98	98
1962 ASM <sup>1</sup> .....	(NA)	(NA)	33.1	139.5	28.8	58.9	110.1	238.0	164.8	400.2	15.7	54.0	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	34.0	136.2	29.7	59.5	108.3	225.2	150.9	370.5	*19.9	54.2	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	34.2	135.4	29.5	59.1	107.3	214.9	151.6	359.7	*13.8	50.9	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	34.1	135.9	29.8	61.3	108.5	226.1	119.6	342.5	*20.0	45.3	(NA)	(NA)
1958 Census <sup>2</sup> ....	569	430	31.1	122.9	27.0	55.3	97.2	196.9	89.4	286.7	14.0	42.8	96	98

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued September 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE    Maurice H. Stans, Secretary  
Rocco C. Siciliano, Under Secretary  
BUREAU OF THE CENSUS



The total value of brick and structural clay tile shipped by all producers in 1967 was \$342.1 million of which \$338.8 million, or 99 percent, were shipped by plants classified in industry 3251, Brick and Structural Clay Tile, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 98 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

#### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3251, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

##### M32D, Clay Construction Products

In this monthly series, data, including geographic information, are published on the production and shipments of brick and glazed brick and structural hollow tile.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3251.—BRICK AND STRUCTURAL CLAY TILE												
United States, total.....	484	364	27.5	144.0	23.4	48.0	110.0	251.1	114.8	361.7	27.1	28.6	216.5
Northeast.....	76	59	3.6	21.6	3.2	6.7	17.5	35.8	16.6	51.5	3.9	3.9	34.1
New Jersey.....	7	5	0.4	2.3	0.4	0.7	1.9	3.8	1.7	5.6	0.1	0.4	4.1
North Central.....	123	95	6.7	39.1	5.8	11.9	31.7	60.6	28.9	88.1	10.3	7.5	60.3
Ohio.....	46	37	3.1	18.5	2.7	5.4	15.2	30.7	14.1	44.0	(D)	3.3	27.9
Indiana.....	18	13	1.0	5.2	0.9	1.7	4.3	7.2	4.2	11.5	0.2	1.3	9.1
Iowa.....	10	9	0.5	2.4	0.4	0.8	1.9	3.8	2.2	5.6	(D)	0.4	3.0
South Atlantic.....	93	77	7.6	37.2	6.3	13.1	26.8	72.9	30.9	101.6	7.7	6.8	50.8
East South Central....	50	40	2.9	13.6	2.5	5.1	10.2	27.5	13.3	40.4	1.8	3.0	24.9
Alabama.....	15	12	0.8	3.9	0.7	1.4	3.1	7.2	3.0	10.1	0.5	(D)	(D)
Mississippi.....	17	13	0.9	3.8	0.8	1.6	2.8	7.3	4.7	11.8	0.4	0.8	6.1
West South Central....	77	59	4.5	19.5	3.9	7.9	14.8	36.3	14.8	50.5	2.5	4.6	23.7
Louisiana.....	10	6	0.3	1.1	0.2	0.5	0.7	1.9	1.2	3.1	0.1	0.4	1.4
Texas.....	49	37	3.2	14.1	2.8	5.7	10.9	25.1	10.1	34.7	1.9	3.1	17.5
Mountain.....	25	14	1.1	6.3	0.8	1.6	4.2	9.1	5.9	15.5	(D)	1.5	11.4
Arizona.....	6	3	0.1	0.6	0.1	0.2	0.4	0.9	0.8	1.8	(D)	0.2	1.3
Pacific.....	40	20	1.1	6.7	0.9	1.7	4.7	8.9	4.6	14.1	(D)	1.3	11.3
California.....	28	14	0.8	4.9	0.7	1.3	3.7	6.1	3.1	10.1	0.5	1.0	8.4

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	1967			1963		
			Production for all purposes (quantity)	Total shipments, including interplant transfers		Production for all purposes (quantity)	Total shipments, including interplant transfers	
				Quantity	Value (million dollars)		Quantity	Value (million dollars)
3251- --	BRICK AND STRUCTURAL CLAY TILE, TOTAL.....		(X)	(X)	342.1	(X)	(X)	308.1
32511 --	Brick, except ceramic glazed and refractory brick, total.....	Million bricks.....	(X)	(X)	298.7	(X)	(X)	263.6
32511 11	Building or common, and face (2-1/4" x 3-5/8" x 7-5/8" equivalent).....	do.....	7,612.9	7,413.2	295.5	7,117.5	7,003.3	256.6
32511 19	Other brick (paving, floor, and sewer) 2-1/4" x 3-5/8" x 7-5/8" equivalent.....	do.....	24.1	21.0	1.5	75.2	72.4	3.0
32511 00	Brick, except ceramic glazed and refractory brick, n.s.k.....		(X)	(X)	1.7	(X)	(X)	3.9
32512 --	Glazed brick and structural hollow tile, total.....		(X)	(X)	29.2	(X)	(X)	35.9
32512 11	Structural clay tile, except facing, including load-bearing and nonload-bearing tile, silo tile, cornerrib tile, structural floor tile, etc...	1,000 short tons.....	240.3	240.6	6.2	324.3	319.7	5.2
32512 31	Facing tile (structural) and ceramic glazed brick: Ceramic glazed facing tile and ceramic glazed brick (2-1/4" x 3-5/8" x 7-5/8" equivalent).....	Million bricks.....	248.0	231.5	21.5	378.4	358.1	29.0
32512 51	Unglazed and salt glazed facing tile (8" x 5" x 12" equivalent).....	Million tiles	4.3	4.2	0.8	7.8	7.6	1.5
32512 00	Glazed brick and structural hollow tile, n.s.k.....		(X)	(X)	0.7	(X)	(X)	(Z)
32510 00	Brick and structural clay tile, n.s.k. (For companies with 10 or more employees. See Note).....		(X)	(X)	11.3	(X)	(X)	8.7
32510 02	Brick and structural clay tile, n.s.k. (For companies with less than 10 employees. See Note).....		(X)	(X)	2.9	(X)	(X)	(X)

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4 digit level followed by "000". Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind. (X) Not applicable. (Z) Less than 0.1 when rounded.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(Not applicable to this report)



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This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

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As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

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More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

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## EXPLANATION OF TERMS

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**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

# 1967 CENSUS OF MANUFACTURES

MC67(P)-32B-3



INDUSTRY SERIES

**preliminary  
report**

## Ceramic wall and floor tile

SIC Code 3253

The Ceramic Wall and Floor Tile Industry includes establishments engaged primarily in manufacturing ceramic wall and floor tile and includes glazed wall tile, ceramic mosaic tile and quarry tile. Establishments primarily engaged in manufacturing structural clay tile and facing tile (structural) are classified in industry 3251, and drain tile in industry 3259.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Ceramic Wall and Floor Tile Industry

amounted to \$160.5 million, a decrease of 3 percent compared with 1963. Value added by manufacture at \$105.9 million in 1967 was 4 percent less than value added in 1963. Average employment in the industry showed a decrease of 17 percent from 1963 to a total of 10.6 thousand employees in 1967.

Of the \$160.5 million total value of shipments and other receipts of establishments classified as ceramic wall and floor tile, \$14.9 million were products primary to other industries; and \$17.7 million were receipts for miscellaneous activities. The industry shipments of primary products represented 90 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 95 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)
INDUSTRY 3253.--CERAMIC WALL AND FLOOR TILE														
1967 Census....	80	59	10.6	60.6	8.5	17.6	41.8	105.9	54.9	160.5	4.7	35.2	90	99
1966 ASM <sup>1</sup> .....	(NA)	(NA)	11.6	63.5	9.4	19.6	45.8	105.4	58.1	162.1	8.2	38.2	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	12.6	65.6	10.2	20.9	46.5	113.6	60.6	173.0	12.8	37.0	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	13.1	66.4	10.4	21.6	46.2	117.0	60.9	175.4	7.1	36.4	(NA)	(NA)
1963 Census.....	90	64	12.8	63.7	10.4	21.0	43.8	110.6	55.1	164.7	9.1	33.2	95	99
1962 ASM <sup>1</sup> .....	(NA)	(NA)	13.2	62.8	10.7	22.0	44.4	120.2	56.9	173.4	*5.4	31.8	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	12.6	57.6	10.0	20.2	39.4	101.6	50.9	153.7	3.8	27.7	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	13.8	61.3	11.1	23.0	43.9	106.9	52.4	157.6	5.6	29.9	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	14.4	63.8	11.7	24.0	47.4	112.6	54.2	163.5	*8.5	28.8	(NA)	(NA)
1958 Census <sup>2</sup> ...	90	62	13.1	53.7	10.9	21.8	41.5	92.8	44.1	135.5	3.3	24.1	94	99

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued August 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents



**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

William H. Chartener, Assistant Secretary for Economic Affairs

**BUREAU OF THE CENSUS** A. Ross Eckler, Director



The total value of ceramic wall and floor tile shipped by all producers in 1967 was \$134.5 million of which \$132.9 million, or 99 percent, were shipped by plants classified in industry 3253, Ceramic Wall and Floor Tile, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 99 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

#### **COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA**

For industry 3253, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

M32D, Clay Construction Products. This monthly report includes data on the production and shipments of ceramic wall and floor tile.



TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3253.--CERAMIC WALL AND FLOOR TILE												
United States, total.....	80	59	10.6	60.6	8.5	17.6	41.8	105.9	54.9	160.5	4.7	12.8	110.6
Northeast.....	17	12	2.7	16.7	2.1	4.5	11.7	29.3	13.1	41.8	1.6	2.9	26.7
North Central.....	15	12	2.3	13.1	1.9	3.9	9.4	22.6	10.6	33.6	1.0	3.9	33.1
South.....	27	23	3.6	17.2	2.9	6.0	12.0	33.2	22.0	55.1	1.5	3.6	26.7
East South Central.....	7	7	1.3	6.8	1.1	2.3	5.3	11.9	7.1	19.4	0.4	(D)	(D)
West.....	21	12	2.1	13.7	1.5	3.2	8.6	20.8	9.3	30.1	0.6	2.5	24.0
California.....	19	12	2.0	13.5	1.5	3.2	8.5	20.6	9.2	29.6	(D)	2.4	23.8

Note: Only those regions, divisions, or States are listed that could be shown without disclosing the operations of individual companies, either directly or by subtraction from higher-level totals. Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	1967			1963		
			Production for all purposes (quantity)	Total shipments, including interplant transfers		Production for all purposes (quantity)	Total shipments, including interplant transfers	
				Quantity	Value (million dollars)		Quantity	Value (million dollars)
3253- --	CERAMIC WALL AND FLOOR TILE, TOTAL.....		(X)	(X)	134.5	(X)	(X)	143.4
32530 71	Quarry tile and promenade tile.....	Million sq.ft.	35.0	34.9	14.7	25.2	23.8	9.6
	Ceramic mosaic tile and accessories (tiles having a facial area of less than 6 square inches):							
32530 13	Glazed.....	...do.....	7.8	6.0	3.4	4.3	4.1	2.9
32530 53	Unglazed.....	...do.....	29.8	29.9	15.7	35.6	35.4	18.7
32530 15	Other glazed floor and wall tile and accessories.....	...do.....	194.2	188.9	95.7	221.3	214.6	110.8
32530 55	Other unglazed floor and wall tile and accessories.....	...do.....	-	-	-	(X)	(X)	
32530 00	Ceramic wall and floor tile, n.s.k. (Represents principally establishments of companies with 10 employees or more in 1967. See Note.).....		(X)	(X)	4.8	(X)	(X)	
32530 02	Ceramic wall and floor tile, n.s.k. (Represents principally establishments of companies with fewer than 10 employees in 1967. See Note.).....		(X)	(X)	0.2	(X)	(X)	1.4

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

- Represents zero. n.s.k. Not specified by kind. (X) Not available.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(Not applicable to this report)

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3253, these small establishments accounted for approximately 0.2 percent of payrolls and 0.1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

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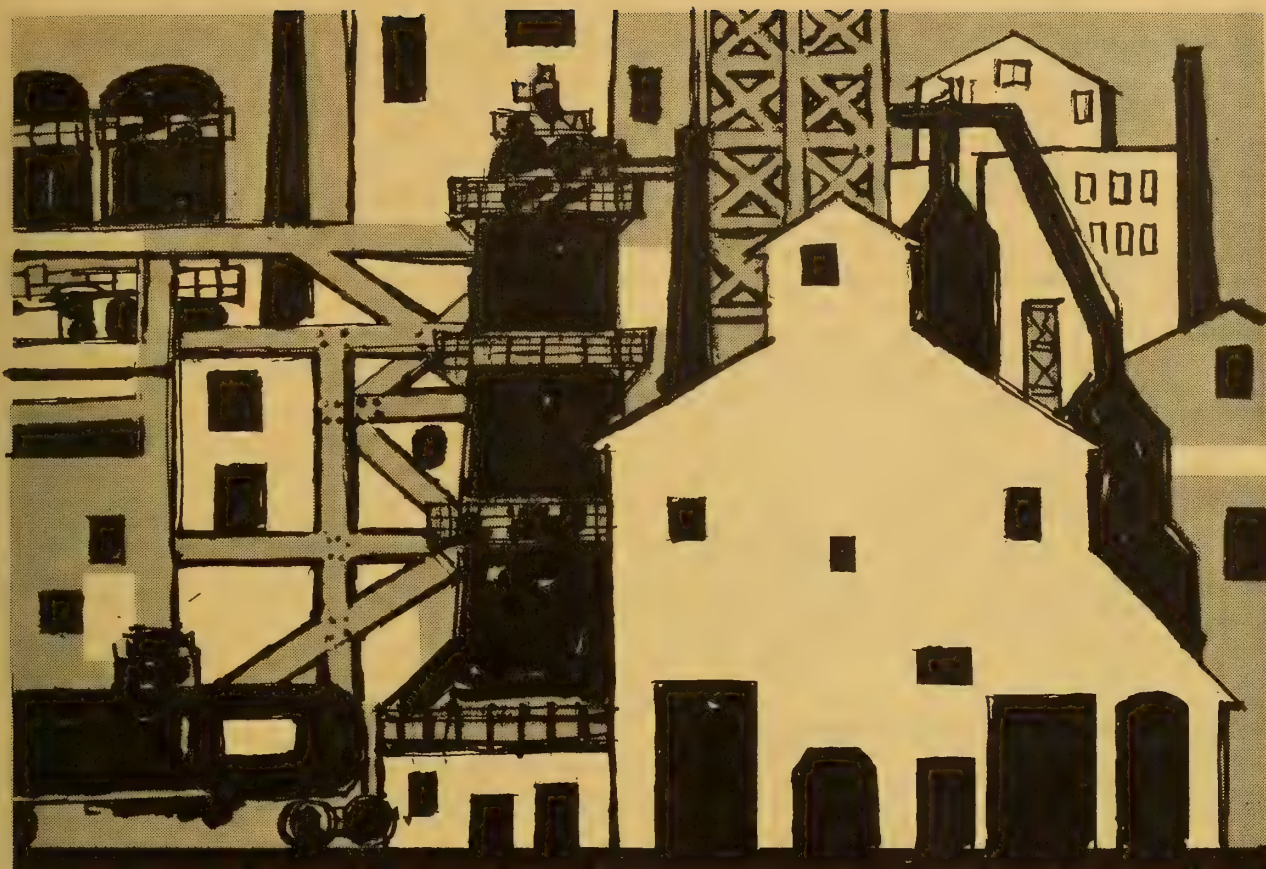
"Value added" avoids the duplication in the value of shipments figure which results from

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# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

**Textile mill products • Apparel and leather • Chemicals, rubber, and plastics • Machinery and equipment • Primary metals • Intermediate metal products • Processed foods • Lumber, furniture, and paper products • Stone, clay, and glass products.**

A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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**U. S. DEPARTMENT OF COMMERCE  
Bureau of the Census**



**U.S. DEPARTMENT OF COMMERCE**

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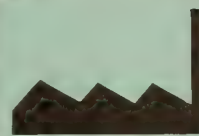
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# 1967 CENSUS OF MANUFACTURES

MC67(P)-32B-4



## INDUSTRY SERIES

**preliminary  
report**

### Clay refractories

SIC Code 3255

The Clay Refractories Industry includes establishments primarily engaged in manufacturing clay firebrick and other heat resisting clay products. Establishments primarily engaged in manufacturing nonclay refractories, as well as all graphite refractories whether of carbon bond or ceramic bond, are classified in industry 3297.

The classification of establishment for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Clay Refractories Industry amounted to \$245.3 million, an increase of 28 percent

compared with 1963. Value added by manufacture at \$151.4 million in 1967 was also 28 percent more than value added in 1963. Average employment in the industry showed an increase of 11 percent from 1963 to a total of 12,6 thousand employees in 1967.

Of the \$245.3 million total value of shipments and other receipts of establishments classified as clay refractories, \$17.9 million were products primary to other industries; and \$10.0 million were receipts for miscellaneous activities. The industry shipments of primary products represented 92 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 91 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3255---CLAY REFRACTORIES														
1967 Census....	146	107	12.6	84.3	10.1	19.2	59.2	151.4	96.7	245.3	17.8	65.2	92	93
1966 ASM <sup>1</sup> .....	(NA)	(NA)	13.4	85.4	11.0	21.4	63.3	158.7	111.6	267.1	21.9	63.7	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	12.6	77.6	10.4	20.7	58.5	140.6	103.4	243.3	11.5	58.6	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	11.6	70.6	9.5	18.8	52.8	135.0	86.7	220.8	8.6	56.6	(NA)	(NA)
1963 Census....	150	109	11.4	64.8	9.4	18.1	49.6	118.2	74.5	192.2	7.9	54.0	91	93
1962 ASM <sup>1</sup> .....	(NA)	(NA)	12.0	67.1	10.3	18.1	49.3	114.6	74.0	189.3	8.1	53.6	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	12.9	68.5	11.1	19.4	51.5	113.1	78.2	189.7	6.5	55.1	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	13.9	71.0	12.1	21.2	54.5	118.8	75.5	193.1	8.5	54.4	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	13.6	69.9	11.8	21.2	53.0	123.0	72.5	193.2	9.9	51.4	(NA)	(NA)
1958 Census <sup>2</sup> ...	167	117	12.4	59.8	10.1	18.6	44.9	104.9	56.6	163.5	10.8	46.3	93	92

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 2 and 2, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued September 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary  
Rocco C. Siciliano, Under Secretary  
**BUREAU OF THE CENSUS**

The total value of clay refractories shipped by all producers in 1967 was \$233.6 million of which \$217.4 million, or 93 percent, were shipped by plants classified in industry 3255, Clay Refractories, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was also 93 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3255, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

M32C, Refractories. Since detailed product statistics are reported quarterly, manufacturers were required to report only total shipments of clay refractories in the census of manufactures. A comparison on the totals as reported in the quarterly survey and the census of manufactures appears in table 3.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967										1963		
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employ-ees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3255.--CLAY REFRACTORIES												
United States, total.....	146	107	12.6	84.3	10.1	19.2	59.2	151.4	96.7	245.3	17.8	11.4	118.2
West.....	17	10	0.5	2.9	0.4	0.7	2.1	7.2	5.8	13.2	(D)	0.5	6.4
Pennsylvania.....	36	29	2.8	18.6	2.3	4.2	13.8	31.3	20.6	51.2	(D)	2.9	29.8
East North Central....	41	31	2.2	12.9	1.9	3.5	9.9	26.0	14.8	41.1	1.1	(D)	(D)
Missouri.....	12	11	3.9	29.6	2.9	5.6	18.6	49.4	33.8	81.9	6.5	(D)	(D)
South Atlantic.....	16	10	1.8	12.0	1.4	2.8	7.9	24.0	12.2	35.2	3.6	1.3	12.7
East South Central....	10	7	0.8	5.1	0.7	1.3	4.4	8.3	5.0	13.0	1.0	0.7	6.6
West South Central....	7	6	0.4	1.7	0.3	0.6	1.4	3.4	1.8	5.1	0.4	0.2	1.7

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3255 --	CLAY REFRACTORIES, TOTAL: <sup>1</sup>					
32550 00	As reported in the 1963 Census of Manufactures.....		(X)	233.6	(X)	180.7
	As reported on Census quarterly Form M32C.....		(X)	225.1	(X)	176.3
32550 15	Glass-house pots, tank blocks, feeder parts, and upper structural shapes used only for glass tanks <sup>2</sup> .....	1,000 short tons.....				
32550 11	Fire clay brick and shapes, except superduty.....	Million 9" equiv. ....	277.0	53.4	213.5	4.4
32550 15	Superduty fire clay brick and shapes.....	..do.....			286.5	44.2
32550 21	High alumina brick and shapes (50% Al <sub>2</sub> O <sub>3</sub> and over) made substantially of calcined diaspore or bauxite <sup>3</sup> .....	..do.....	78.5	24.3	67.5	19.2
	Insulating firebrick and shapes: <sup>5</sup>					
32550 26	1,600°F to 2,000°F (but not including 2,000°F).....	Million 9" equiv. ....	49.7	26.9	32.6	15.4
32550 27	2,000°F to 2,300°F (but not including 2,300°F).....	..do.....	3.4	0.7	5.7	1.2
32550 23	2,300°F to 2,800°F (but not including 2,800°F).....	..do.....	14.8	3.1	12.0	2.3
32550 24	2,800°F and higher.....	..do.....	32.9	9.9	26.5	7.8
			8.2	3.8		
32550 31	Ladle brick.....	..do.....	187.2	23.8	185.0	20.7
32550 41	Sleeves, nozzles, runnerbrick and tuyeres.....	..do.....	45.0	12.2	42.5	9.4
32550 47	Hot top refractories.....	1,000 short tons.....	47.3	4.0	61.6	4.4
32550 49	Clay kiln furniture, radiant heater elements, potters' supplies, and other miscellaneous shaped refractory items.....	..do.....	(S)	7.8	(NA)	7.2
32550 53	Refractory bonding mortars, air-setting (wet and dry types) <sup>6</sup> .....	..do.....	62.8	8.6	53.5	6.5
32550 57	Refractory bonding mortars, except air-setting types.....	..do.....	14.7	1.7	9.5	1.0
32550 61	Plastic refractories and ramming mixes <sup>7</sup> .....	..do.....	190.1	17.0	165.7	13.6
	Castable refractories (hydraulic setting):					
32550 65	Clay <sup>8</sup> .....	..do.....	161.8	16.5	121.0	12.1
32550 69	Insulating.....	..do.....	39.2	5.2	18.3	2.3
32550 94	Other clay refractory materials sold in lump or ground form <sup>8</sup> .....	..do.....	225.3	6.2	204.3	4.6

(NA) Not available. (S) Does not meet publication standards. (X) Not applicable.

<sup>1</sup>Does not include shipments of ground crude fire clay, high alumina clay, and silica fire clay for direct use as finished refractory products, but not classified as refractories under the Standard Industrial Classification System.

<sup>2</sup>Data for, "Glass-house pots, tank blocks, feeder parts, and upper structure shapes used only for glass tanks" (3255045) is combined with data for "Fireclay (including semisilica) brick and shapes, except superduty" (3255011) in order to avoid disclosing individual company data. For 1963, quantity of shipments was shown in short tons.

<sup>3</sup>Excludes data for mullite and extra high alumina refractories. These products are included with mullite and extra high alumina brick and shapes in the nonclay refractories section.

<sup>4</sup>"Calcined" as applied to diaspore and bauxite implies heat treatment short of fusion for volume stability prior to use in a refractory product. In the process, volatile materials are driven off and chemical changes take place.

<sup>5</sup>The subdivisions are in accordance with the ASTM Classification C1 55, the respective groups being 16, 20, 23, and 28 and higher.

<sup>6</sup>Includes bonding mortars which contain up to 60% Al<sub>2</sub>O<sub>3</sub>, dry basis. Bonding mortars which contain more than 60% Al<sub>2</sub>O<sub>3</sub>, dry basis are included in the non-clay refractories section.

<sup>7</sup>Includes products referred to as plastic fire brick and the less plastic materials intended for ramming into place after the addition of water (when shipped in dry form). Excludes mixes made of mullite or extra high alumina. Mixes made of these products are included in the nonclay refractories section.

<sup>8</sup>Includes shipments for direct use as finished refractory products by establishments classified in "manufacturing" industries, and excludes shipments to refractory producers for reprocessing in the manufacture of brick and other refractories.

<sup>9</sup>Includes data for calcined clay, ground brick, and siliceous and other gunning mixes.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(Not applicable to this report)



## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3255, these small establishments accounted for approximately 0.7 percent of payrolls and 0.8 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.

# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





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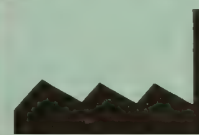
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# 1967 CENSUS OF MANUFACTURES



INDUSTRY SERIES

preliminary  
report

## Structural clay products, n.e.c.

SIC Code 3259

The Structural Clay Products, N.E.C., industry includes establishments primarily engaged in the manufacture of clay sewer pipe and structural clay products, not elsewhere classified, such as architectural terra-cotta, roofing tile, conduit, chimney pipe, wall coping, adobe brick, etc. For a detailed list of products of industry 3259, refer to table 3.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Structural Clay Products, N.E.C.

Industry amounted to \$154.3 million, a decrease of 3 percent compared with 1963. Value added by manufacture at \$104.1 million in 1967 was 4 percent less than value added in 1963. Average employment in the industry showed a decrease of 20 percent from 1963 to a total of 9.8 thousand employees in 1967.

Of the \$154.3 million total value of shipments and other receipts of establishments classified as structural clay products, n.e.c., \$13.1 million were products primary to other industries; and \$7.9 million were receipts for miscellaneous activities. The industry shipments of primary products represented 91 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 89 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3259. — STRUCTURAL CLAY PRODUCTS, N.E.C.														
1967 Census....	145	96	9.8	55.7	8.1	16.6	43.2	104.1	49.3	154.3	9.7	29.9	91	96
1966 ASM <sup>1</sup> .....	(NA)	(NA)	10.9	58.0	9.2	18.6	45.3	102.8	56.0	155.7	5.9	31.0	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	11.8	62.1	10.0	20.2	49.1	109.3	59.7	167.0	8.5	28.7	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	11.3	61.3	9.4	20.5	47.7	112.7	56.9	168.7	6.6	26.6	(NA)	(NA)
1963 Census....	164	108	12.2	62.0	10.4	21.1	48.7	108.4	53.4	159.7	5.8	27.4	89	95
1962 ASM <sup>1</sup> .....	(NA)	(NA)	12.2	63.0	10.5	20.9	49.6	104.9	47.3	153.9	*7.4	24.1	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	13.1	62.9	11.3	22.9	49.8	107.4	45.2	150.1	8.2	26.4	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	13.4	62.2	11.6	23.0	49.9	108.8	45.5	149.7	11.4	23.9	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	13.9	62.2	11.7	23.4	48.9	107.7	43.9	156.6	6.8	18.9	(NA)	(NA)
1958 Census <sup>2</sup> ...	192	117	13.8	56.5	11.8	22.2	44.6	95.9	38.2	134.9	6.8	19.8	97	94

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents



U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

William H. Chartener, Assistant Secretary for Economic Affairs

BUREAU OF THE CENSUS A. Ross Eckler, Director



The total value of structural clay products, n.e.c., shipped by all producers in 1967 was \$138.6 million of which \$133.3 million, or 96 percent, were shipped by plants classified in industry 3259, Structural Clay Products, N.E.C., while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 95 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

#### **COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA**

For industry 3259, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

M32D, Clay Construction Products.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3259.-STRUCTURAL CLAY PRODUCTS, N.E.C.												
United States, total.....	145	96	9.8	55.7	8.1	16.6	43.2	104.1	49.3	154.3	9.7	12.2	108.4
Middle Atlantic.....	13	10	0.8	4.8	0.7	1.5	4.0	8.5	3.6	12.0	(D)	(D)	(D)
Pennsylvania.....	9	6	0.5	3.0	0.4	0.9	2.6	5.4	2.1	7.6	0.2	(D)	(D)
East North Central....	71	47	4.2	24.4	3.5	7.1	19.3	41.5	18.6	59.6	3.6	5.3	37.5
Ohio.....	38	26	2.6	14.8	2.3	4.3	11.8	24.8	10.8	35.4	1.8	3.3	21.2
Indiana.....	12	9	0.8	4.5	0.6	1.3	3.4	7.3	3.8	11.0	0.4	(D)	(D)
West North Central....	16	12	1.1	7.2	0.9	2.0	5.5	13.4	7.7	21.2	0.7	1.5	14.0
South.....	21	16	2.4	11.8	1.9	4.1	8.5	23.7	11.8	36.4	3.6	2.5	23.5
East South Central....	5	5	0.6	3.1	0.4	0.9	2.1	6.6	2.6	9.6	0.3	(D)	(D)
West.....	24	11	1.2	7.4	1.0	2.0	5.9	17.0	7.6	25.2	(D)	1.8	24.7

Note: Only those regions, divisions, or States are listed that could be shown without disclosing the operations of individual companies, either directly or by subtraction from higher-level totals. Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	1967			1963		
		Production for all purposes (1,000 short tons)	Total shipments, including interplant transfers		Production for all purposes (1,000 short tons)	Total shipments, including interplant transfers	
			Quantity (1,000 short tons)	Value (million dollars)		Quantity (1,000 short tons)	Value (million dollars)
3259- --	STRUCTURAL CLAY PRODUCTS, N.E.C., TOTAL.....	(X)	(X)	138.6	(X)	(X)	141.4
32591 11	Vitrified clay sewer pipe and fittings.....	1,509.2	1,504.0	93.8	1,827.3	1,726.6	98.2
32592- --	Other structural clay products, n.e.c., total.....	(X)	(X)	40.1	(X)	(X)	39.9
32592 11	Drain tile.....	790.6	780.1	20.6	859.8	822.2	19.7
32592 51	Flue lining.....	177.3	170.6	7.1	182.7	176.7	7.6
32592 98	Other structural clay products (such as terra cotta (architectural), roofing tile, conduit, chimney pipe, tops and thimbles, wall coping, adobe brick, etc.).....	(X)	(X)	11.9	(X)	(X)	11.8
32592 00	Other structural clay products, n.e.c.....	(X)	(X)	0.5	(X)	(X)	0.7
32590 00	Structural clay products, n.e.c. (For companies with 10 or more employees. See note).....	(X)	(X)	3.8	(X)	(X)	3.3
32590 02	Structural clay products, n.e.c. (For companies with less than 10 employees. See note).....	(X)	(X)	0.9	(X)	(X)	

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.e.c. Not elsewhere classified. (X) Not applicable.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(Not applicable to this report)

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3259, these small establishments accounted for approximately 0.5 percent of payrolls and 0.6 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

**Textile mill products • Apparel and leather • Chemicals, rubber, and plastics • Machinery and equipment • Primary metals • Intermediate metal products • Processed foods • Lumber, furniture, and paper products • Stone, clay, and glass products.**

A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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**U. S. DEPARTMENT OF COMMERCE  
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**WASHINGTON, D.C. 20233**

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**U.S. DEPARTMENT OF COMMERCE**

# 1967 CENSUS OF MANUFACTURES

INDUSTRY SERIES

preliminary  
report

## Vitreous plumbing fixtures

SIC Code 3261

The Vitreous China Plumbing Fixtures and China and Earthenware Fittings and Bathroom Accessories Industry includes establishments engaged primarily in the manufacture of china plumbing fixtures and china and earthenware fittings and bathroom accessories. For a detailed list of products of industry 3261, refer to table 3.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Vitreous Plumbing Fixtures Industry

amounted to \$170.0 million, an increase of 9 percent compared with 1963. Value added by manufacture at \$111.4 million in 1967 was 10 percent more than value added in 1963. Average employment in the industry showed a decrease of 10 percent from 1963 to a total of 8.4 thousand employees in 1967.

Of the \$170.0 million total value of shipments and other receipts of establishments classified as vitreous plumbing fixtures, \$9.6 million were products primary to other industries; and \$20.2 million were receipts for miscellaneous activities. The industry shipments of primary products represented 94 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 97 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3261.-VITREOUS PLUMBING FIXTURES														
1967 Census....	51	40	8.4	56.5	7.0	13.8	45.7	111.4	58.5	170.0	2.6	26.5	94	95
1966 ASM <sup>1</sup> .....	(NA)	(NA)	9.2	60.0	7.6	15.2	48.2	117.8	61.6	180.7	5.2	26.6	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	9.0	56.0	7.5	14.6	45.2	112.0	61.1	173.6	3.0	27.1	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	9.1	57.3	7.6	15.2	46.7	110.1	56.9	166.1	3.1	28.1	(NA)	(NA)
1963 Census....	49	43	9.3	56.8	7.9	25.5	46.6	101.5	55.7	155.7	2.4	26.8	97	97
1962 ASM <sup>1</sup> .....	(NA)	(NA)	8.8	51.5	7.4	14.3	41.0	88.1	52.8	141.5	1.6	25.1	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	8.9	49.3	7.5	14.1	39.3	85.8	49.8	135.4	3.2	27.9	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	10.3	56.0	8.7	17.0	45.0	100.6	57.0	153.7	3.2	28.9	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	10.9	58.8	9.4	18.6	48.2	112.8	64.9	175.5	1.8	26.8	(NA)	(NA)
1958 Census <sup>2</sup> ...	49	43	9.7	49.6	8.1	15.6	39.6	87.3	52.8	142.7	1.6	24.5	97	97

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued August 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents



**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary  
 Rocco C. Siciliano, Under Secretary  
 William H. Chartener, Assistant Secretary for Economic Affairs  
**BUREAU OF THE CENSUS** A. Ross Eckler, Director

The total value of vitreous plumbing fixtures shipped by all producers in 1967 was \$146.9 million of which \$140.3 million, or 95 percent, were shipped by plants classified in industry 3261, Vitreous Plumbing Fixtures, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 97 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

#### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3261, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MQ-34E, Plumbing Fixtures. The 1967 Annual Summary of this quarterly report is the source of data for codes 3261016-3261024 in table 3.



TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3261.-- VITREOUS PLUMBING FIXTURES													
United States, total.....	51	40	8.4	56.5	7.0	13.8	45.7	111.4	58.5	170.0	2.6	9.3	101.5
Northeast.....	19	12	2.6	17.7	2.1	4.1	14.5	36.5	17.0	53.6	0.7	3.4	37.6
New Jersey.....	10	7	1.1	8.0	0.9	1.8	6.4	15.5	7.6	23.2	0.2	2.0	20.0
North Central.....	12	12	3.1	20.7	2.6	5.3	16.8	36.6	21.8	58.7	1.2	3.8	38.1
Ohio.....	4	4	1.1	7.5	1.0	1.9	6.0	14.9	9.3	24.5	0.8	(D)	(D)
South.....	10	9	1.6	10.2	1.4	2.8	8.2	21.7	10.7	32.2	0.3	1.0	10.9
Pacific.....	10	7	1.1	7.9	0.9	1.7	6.2	16.6	9.0	25.6	0.4	1.1	14.8
California.....	10	7	1.1	7.9	0.9	1.7	6.2	16.6	9.0	25.6	0.4	1.1	14.8

Note: Only those regions, divisions, or States are listed that could be shown without disclosing the operations of individual companies, either directly or by subtraction from higher-level totals. Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	1967			1963		
		Production for all purposes (1,000)	Total shipments, including interplant transfers		Production for all purposes (1,000)	Total shipments, including interplant transfers	
			Quantity (1,000)	Value (million dollars)		Quantity (1,000)	Value (million dollars)
3261- --	VITREOUS PLUMBING FIXTURES, TOTAL.....	(X)	(X)	146.9	(X)	(X)	143.8
32610 10	Plumbing fixtures:						
	Total as reported in the census of manufactures.....	(X)	(X)	142.7	(X)	(X)	137.0
	Total as reported on Census quarterly Form M34E <sup>1</sup> .....	(X)	(X)	<sup>2</sup> 137.8	(X)	(X)	<sup>2</sup> 142.2
32610 17	Lavatories.....	2,212.9	2,303.9	25.6	2,598.7	2,523.5	(X)
	Water closet bowls:						
32610 18	Syphon jet.....	2,976.0	2,962.2	40.2	1,132.9	1,022.3	(X)
32610 20	Washdown.....	716.9	756.2	5.7	1,687.5	1,663.0	(X)
32610 22	Reverse trap.....	1,378.3	1,486.5	15.2	2,812.9	2,734.7	(X)
32610 24	Flush tanks.....	4,291.7	4,430.8	42.7	4,787.6	4,600.6	(X)
32610 51	China and earthenware plumbing fixture accessories and fittings (including towel racks, soap cups, etc.).....	(X)	(X)	3.6	(X)	(X)	6.1
32610 00	Vitreous and semivitreous plumbing fixtures and accessories, n.s.k.....	(X)	(X)	0.6	(X)	(X)	0.7

n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Source: Current Industrial Reports Series MQ-34E (67)-5. No separate data for vitreous and semivitreous drinking fountains, urinals, sinks, laundry trays, bathtubs, shower receptors (sold separately) and shower stalls (including receptors) are available since these items were combined with similar items made of other materials in the MQ-34E report. Values reported in these two surveys differ. The values reported in the MQ-34E survey represent manufacturers' net billing price after trade and quantity discounts have been subtracted but before cash discounts have been subtracted. Also, returns and allowances are not subtracted. The values reported in the census of manufactures are based on net selling values, f.o.b. plant. Net selling values do not include discounts or allowances. Freight charges and excise taxes are excluded from both surveys.

<sup>2</sup>Represents vitreous china only. In addition, shipments valued at \$3.2 in 1967, and \$2.4 in 1963, were reported for plumbing fixtures made of glazed earthenware, concrete, and composition.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(Not applicable to this report)

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

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As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

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# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

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This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

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The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

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"Value added" avoids the duplication in the value of shipments figure which results from

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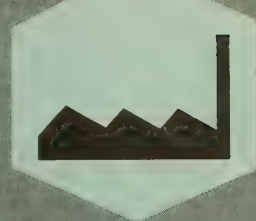
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# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

### Vitreous china food utensils

SIC Code 3262

**preliminary  
report**

The Vitreous China Table and Kitchen Articles Industry includes establishments primarily engaged in manufacturing vitreous china table and kitchen articles for use in households and in hotels, restaurants, and other commercial institutions for preparing, serving, or storing food or drink. Establishments primarily engaged in manufacturing fine (semivitreous) types of earthenware (whiteware) table and kitchen articles are classified in industry 3263.

fied in the Vitreous China Food Utensils Industry amounted to \$67.2 million, an increase of 23 percent compared with 1963. Value added by manufacture at \$55.8 million in 1967 was 31 percent more than value added in 1963. Average employment in the industry showed an increase of 11 percent from 1963 to a total of 7.0 thousand employees in 1967.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

Of the \$67.2 million total value of shipments and other receipts of establishments classified as vitreous china table and kitchen articles, \$5.2 million were products primary to other industries; and \$1.0 million were receipts for miscellaneous activities. The industry shipments of primary products represented 92 percent of

In 1967, the value of products shipped and miscellaneous receipts of establishments classi-

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3262.—VITREOUS CHINA FOOD UTENSILS														
1967 Census....	39	28	7.0	36.1	6.0	11.2	27.3	55.8	12.7	67.2	1.9	15.1	92	89
1966 ASM <sup>1</sup> .....	(NA)	(NA)	6.6	33.5	5.6	10.5	24.9	50.1	10.4	60.0	1.3	13.3	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	6.5	32.4	5.5	10.5	24.2	47.9	9.8	57.2	3.0	12.7	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	6.4	31.4	5.3	10.1	23.0	45.2	9.8	54.7	0.6	12.3	(NA)	(NA)
1963 Census.....	31	21	6.3	29.6	5.3	9.8	21.8	42.5	8.9	51.0	0.7	11.9	(D)	91
1962 ASM <sup>1</sup> .....	(NA)	(NA)	6.7	29.6	5.5	10.6	21.6	43.8	9.2	52.2	1.1	11.5	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	6.5	27.9	5.4	10.1	20.2	40.2	8.6	49.2	0.6	10.7	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	7.1	30.0	5.9	10.9	21.6	42.6	9.0	51.5	0.8	11.2	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	7.2	30.4	6.1	11.6	22.6	42.7	8.9	51.8	1.1	11.6	(NA)	(NA)
1958 Census <sup>2</sup> ...	28	23	7.2	28.6	6.0	10.9	20.5	39.3	8.1	47.7	0.9	11.7	96	96

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals. (NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

the total manufactured product shipments, primary and secondary. This percent, is called the specialization ratio for the industry.

The total value of Vitreous China Table and Kitchen Articles shipped by all producers in 1967 was \$68.6 million of which \$60.9 million, or 89 percent, were shipped by plants classified in industry 3262, Vitreous China Food Utensils, while the remainder was shipped by plants classi-

fied in other industries. This percent, called the coverage ratio, was 91 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

## 1967 CENSUS OF MANUFACTURES

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

3

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
	INDUSTRY 3262.—VITREOUS CHINA FOOD UTENSILS												
United States, total.....	39	28	7.0	36.1	6.0	11.2	27.3	55.8	12.7	67.2	1.9	6.3	42.5
Northeast.....	13	10	5.1	27.4	4.2	8.0	20.3	43.3	10.0	52.5	1.5	(D)	(D)
North Central.....	11	8	1.5	6.8	1.3	2.3	5.4	9.9	2.2	11.4	0.3	1.1	6.6
Ohio.....	8	6	1.3	6.0	1.2	2.1	4.9	8.9	1.9	9.8	(D)	(D)	(D)
South.....	4	3	0.1	0.4	0.1	0.2	0.3	0.6	0.3	0.9	(D)	(D)	(D)
West.....	11	7	0.4	1.4	0.4	0.7	1.3	2.0	0.5	2.5	(D)	(D)	(D)
California.....	8	6	0.3	1.3	0.3	0.6	1.2	1.9	0.4	2.2	(D)	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (million dozen pieces)	Value (million dollars)	Quantity (million dozen pieces)	Value (million dollars)
3262 --	VITREOUS CHINA FOOD UTENSILS, TOTAL.....	(X)	68.6	(X)	51.9
	Vitreous china and porcelain table and kitchen articles (feldspar and bone):				
	Tableware (for serving food and drink):				
32620 18	Hotel or commercial.....	8.0	46.6	6.7	33.8
32620 14	Household.....	0.6	20.3	1.1	17.7
32620 52	Kitchenware, household and commercial (for cooking, preparing, and storing food and drink).....	0.2	1.2		
32620 00	Vitreous china food utensils, n.s.k. (for companies with 10 or more employees. See Note).....	(X)	0.3	(X)	0.3
32620 02	Vitreous china food utensils, n.s.k. (for companies with less than 10 employees. See Note).....	(X)	0.2		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind. (X) Not applicable.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(Not applicable to this report)



## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3262, these small establishments accounted for approximately 0.0 percent of payrolls and 0.2 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

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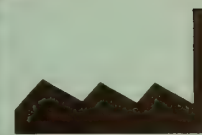
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# 1967 CENSUS OF MANUFACTURES



MC67(P)-32C-3

## INDUSTRY SERIES

### Fine earthenware food utensils

SIC Code 3263

**preliminary  
report**

The Fine Earthenware (Whiteware) Table and Kitchen Articles Industry includes establishments primarily engaged in manufacturing fine (semi-vitreous) types of earthenware table and kitchen articles for preparing, serving, or storing food and drink. Establishments primarily engaged in manufacturing vitreous china table and kitchen articles are classified in industry 3262.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Fine Earthenware Food Utensils Industry amounted to \$47.1 million, a decrease of 20

percent compared with 1963. Value added by manufacture at \$34.6 million in 1967 was 16 percent less than value added in 1963. Average employment in the industry showed a decrease of 19 percent from 1963 to a total of 5.9 thousand employees in 1967.

Of the \$47.1 million total value of shipments and other receipts of establishments classified as fine earthenware food utensils, \$6.9 million were products primary to other industries; and \$0.3 million were receipts for miscellaneous activities. The industry shipments of primary products represented 85 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 92 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
INDUSTRY 3263.--FINE EARTHENWARE FOOD UTENSILS														
1967 Census....	21	17	5.9	27.5	5.3	9.8	22.6	34.6	12.4	47.1	1.0	10.1	85	86
1966 ASM <sup>1</sup> .....	(NA)	(NA)	6.3	27.4	5.6	10.2	22.2	34.1	13.7	47.6	1.0	10.5	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	6.4	28.2	5.8	10.7	22.9	37.2	14.5	52.3	0.9	10.5	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	7.5	32.3	6.7	12.5	26.8	44.5	19.0	62.2	1.1	11.1	(NA)	(NA)
1963 Census....	21	18	7.3	31.6	6.6	12.3	26.4	41.0	17.9	59.0	0.8	9.7	92	91
1962 ASM <sup>1</sup> .....	(NA)	(NA)	*6.7	*27.1	*6.0	*10.7	*22.2	*34.2	*14.2	*48.4	*0.7	*6.7	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	*6.9	*25.9	*6.2	*10.8	*21.1	*32.8	*13.0	*46.4	*0.7	*6.4	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	*8.8	*33.6	*7.9	*13.8	*27.9	*41.7	*16.1	*58.3	*0.7	*9.1	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	*9.3	*33.5	*8.5	*14.3	*28.2	*41.9	*15.5	*58.2	*0.5	*9.5	(NA)	(NA)
1958 Census <sup>2</sup> ...	30	24	8.7	28.7	8.0	12.6	24.8	36.3	13.2	50.2	0.6	10.8	98	91

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued September 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE    Maurice H. Stans, Secretary  
Rocco C. Siciliano, Under Secretary  
BUREAU OF THE CENSUS



The total value of fine earthenware food utensils shipped by all producers in 1967 was \$46.6 million of which \$39.9 million, or 86 percent, were shipped by plants classified in industry 3263, Fine Earthenware Food Utensils, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 91 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3263.--FINE EARTHENWARE FOOD UTENSILS													
United States, total.....	21	17	5.9	27.5	5.3	9.8	22.6	34.6	12.4	47.1	1.0	7.3	41.0
East North Central....	7	7	2.7	11.9	2.4	4.2	9.8	14.3	6.0	20.1	(D)	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (million dozen)	Value (million dollars)	Quantity (million dozen)	Value (million dollars)
3263- --	FINE EARTHENWARE FOOD UTENSILS, TOTAL.....	(X)	46.6	(X)	58.2
32630 12	Tableware, household and commercial (for serving food and drink).....	22.9	44.5	28.2	56.7
32630 52	Kitchenware, household and commercial (for cooking, preparing, and storing food and drink).....	(S)	2.1	0.3	1.6

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review. (X) Not applicable.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(Not applicable to this report)

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3263, these small establishments accounted for approximately 0 percent of payrolls and 0 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees**--All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls**--This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials**--The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed**--In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments**--The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products**--In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture**--This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment**--For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories**--Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





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# 1967 CENSUS OF MANUFACTURES

MC67(P)-32C-4

## INDUSTRY SERIES

### Porcelain electrical supplies

SIC Code 3264

preliminary  
report

The Porcelain Electrical Supplies Industry includes establishments primarily engaged in manufacturing porcelain electrical insulators, molded porcelain parts for electrical devices, spark plug and steatitic porcelain, and other electrical supplies from clay and other ceramic materials.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Porcelain Electrical Supplies Industry amounted to \$225.0 million, an increase of 71 percent compared with 1963. Value added by

manufacture at \$153.5 million in 1967 was 71 percent more than value added in 1963. Average employment in the industry showed an increase of 31 percent from 1963 to a total of 13,4 thousand employees in 1967.

Of the \$225.0 million total value of shipments and other receipts of establishments classified as porcelain electrical supplies, \$34.2 million were products primary to other industries; and \$5.2 million were receipts for miscellaneous activities. The industry shipments of primary products represented 84 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 91 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (per-cent)	Coverage ratio (per-cent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3264.—PORCELAIN ELECTRICAL SUPPLIES														
1967 Census....	74	50	13.4	89.9	11.0	22.2	67.5	153.5	76.0	225.0	21.4	35.6	84	99
1966 ASM <sup>1</sup> .....	(NA)	(NA)	12.1	76.0	10.0	20.3	57.7	139.1	60.7	197.1	11.4	26.7	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	10.7	66.0	8.8	18.0	49.5	114.0	53.6	165.9	7.7	22.0	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	9.9	59.4	8.0	16.3	43.2	94.6	43.6	139.0	7.6	19.1	(NA)	(NA)
1963 Census....	79	49	10.2	57.4	8.0	15.9	41.1	90.0	41.8	131.8	4.1	19.6	91	95
1962 ASM <sup>1</sup> .....	(NA)	(NA)	10.1	53.8	8.0	15.6	38.8	83.9	40.5	122.8	4.7	19.0	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	9.7	50.6	7.7	15.1	36.4	77.4	37.5	115.3	5.2	17.2	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	9.4	47.2	7.6	15.2	35.4	75.9	35.9	111.4	4.1	16.3	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	9.6	46.5	8.0	16.1	35.1	76.7	34.8	109.9	3.5	15.7	(NA)	(NA)
1958 Census <sup>2</sup> ...	59	44	9.1	42.4	7.5	14.7	31.3	66.1	31.0	97.5	4.4	13.9	92	93

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director

The total value of porcelain electrical supplies shipped by all producers in 1967 was \$188.4 million of which \$185.6 million, or 99 percent, were shipped by plants classified in industry 3264, Porcelain Electrical Supplies, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 95 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
	INDUSTRY 3264.--PORCELAIN ELECTRICAL SUPPLIES												
United States, total.....	74	50	13.4	89.9	11.0	22.2	67.5	153.5	76.0	225.0	21.4	10.2	90.0
Pennsylvania.....	5	4	1.2	7.6	1.0	2.1	6.0	14.0	3.7	17.7	1.3	1.3	11.0
North Central.....	16	12	4.2	29.7	3.3	6.8	22.2	50.3	23.5	72.5	9.3	(D)	(D)
South Atlantic.....	9	7	1.8	11.8	1.5	3.1	9.0	21.6	15.7	36.0	4.3	(D)	(D)
Pacific.....	12	2	0.2	0.9	0.1	0.3	0.7	1.4	0.6	1.9	0.1	0.1	1.2

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3264- --	PORCELAIN ELECTRICAL SUPPLIES, TOTAL.....		(X)	<sup>1</sup> 188.4	(X)	<sup>1</sup> 121.5
32640 --	Porcelain, steatite, and other ceramic electrical products: Porcelain electrical products (excluding steatite alumina, ferrite, titanate, etc.):					
	High-voltage porcelain products (wet process porcelain) shipped as complete insulators:					
32640 12	Low-voltage one piece pin-type insulators.....		(X)	6.0	(X)	3.1
32640 13	High-voltage pin-type insulators and line posts.....		(X)	11.3	(X)	6.1
	Supension type insulators:					
32640 14	7-1/2-inch disc and smaller.....	Million units.	3.7	8.4	(X)	6.3
32640 15	Larger than 7-1/2-inch disc.....	do.....	6.4	22.8	(X)	11.2
32640 16	Switch and bus insulators (including cap and pin, and post types).....		(X)	20.9	(X)	11.1
32640 17	All other, including guy strain insulators and spools.....		(X)	8.7	(X)	11.8
32640 18	High voltage porcelain products (wet process porcelain), shipped as porcelain pieces only for component parts of other electrical equipment.....		(X)	22.7	(X)	8.8
32640 21	All standard dry process electrical porcelain (including cleats, knobs, tubes, outlet and switchbox covers, etc.)....		(X)	1.1	(X)	1.3
32640 31	All special dry process electrical porcelain (including por- celain parts for wiring devices, fuses, circuit breakers, radio receiving sets, spark plugs, etc., and electrical re- fractory porcelain).....		(X)	34.5	(X)	26.0
32640 41	Steatite electrical products.....		(X)	13.4	(X)	15.6
32640 98	Alumina, ferrite, except electronic application, titanate, and other ceramic electrical products.....		(X)	26.8	(X)	17.1
32640 00	Porcelain electrical supplies, n.s.k. (For companies with 10 or more employees. See Note.).....		(X)	11.6	(X)	3.1
32640 02	Porcelain electrical supplies, n.s.k. (For companies with less than 10 employees. See Note.).....		(X)	0.2		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Includes value of metal fittings when shipped as an integral part of the ceramic product.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(Not applicable to this report)

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

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# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

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The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

**Textile mill products • Apparel and leather • Chemicals, rubber, and plastics • Machinery and equipment • Primary metals • Intermediate metal products • Processed foods • Lumber, furniture, and paper products • Stone, clay, and glass products.**

A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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**Bureau of the Census**

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BUREAU OF THE CENSUS  
WASHINGTON, D.C. 20233

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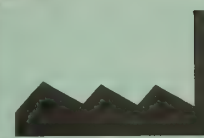
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# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

### Pottery products, n.e.c.

SIC Code 3269

**preliminary  
report**

The Pottery Products, Not Elsewhere Classified, Industry includes establishments primarily engaged in firing and decorating white china and earthenware for the trade and manufacturing art and ornamental pottery, industrial and laboratory pottery, stoneware and coarse earthenware table and kitchen articles, unglazed red earthenware florists' articles, and other pottery products, not elsewhere classified.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classi-

fied in the Pottery Products, N.E.C., Industry amounted to \$80.4 million, a decrease of 16 percent compared with 1963. Value added by manufacture at \$56.9 million in 1967 was 8 percent less than value added in 1963. Average employment in the industry showed a decrease of 20 percent from 1963 to a total of 7.3 thousand employees in 1967.

Of the \$80.4 million total value of shipments and other receipts of establishments classified as pottery products, n.e.c., \$2.8 million were products primary to other industries; and \$2.0 million were receipts for miscellaneous activities. The industry shipments of primary products represented 84 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 87 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3269. --POTTERY PRODUCTS, N. E. C.														
1967 Census . . . .	433	94	7.3	32.9	6.4	12.5	25.2	56.9	23.8	80.4	2.5	9.1	84	96
1966 ASM <sup>1</sup> . . . . .	(NA)	(NA)	9.2	41.6	7.8	16.1	30.9	73.3	38.6	110.3	*7.8	12.7	(NA)	(NA)
1965 ASM <sup>1</sup> . . . . .	(NA)	(NA)	9.1	38.8	7.7	15.8	28.8	65.2	34.6	99.0	2.6	11.7	(NA)	(NA)
1964 ASM <sup>1</sup> . . . . .	(NA)	(NA)	8.9	39.8	7.2	15.3	28.9	67.4	35.1	101.1	*2.5	11.3	(NA)	(NA)
1963 Census . . . . .	458	98	9.1	37.5	7.5	14.9	27.8	62.1	34.1	95.5	3.1	9.9	87	89
1962 ASM <sup>1</sup> . . . . .	(NA)	(NA)	9.8	38.0	8.4	15.3	28.5	59.8	34.8	96.2	1.3	9.7	(NA)	(NA)
1961 ASM <sup>1</sup> . . . . .	(NA)	(NA)	9.0	33.8	7.7	14.7	25.6	55.8	31.7	89.6	3.3	9.0	(NA)	(NA)
1960 ASM <sup>1</sup> . . . . .	(NA)	(NA)	9.7	35.0	8.3	16.0	26.7	57.3	29.8	88.8	2.8	10.0	(NA)	(NA)
1959 ASM <sup>1</sup> . . . . .	(NA)	(NA)	10.4	34.8	8.7	16.6	26.6	57.7	31.1	87.3	2.4	9.3	(NA)	(NA)
1958 Census <sup>2</sup> . . . .	587	108	9.2	31.2	7.7	15.2	23.8	54.0	25.2	78.8	3.3	8.4	93	90

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census' series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued September 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director

The total value of pottery products, n.e.c., shipped by all producers in 1967 was \$90.6 million of which \$75.6 million, or 96 percent, were shipped by plants classified in industry 3269, Pottery Products, N.E.C., while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 89 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3269.--POTTERY PRODUCTS, N.E.C.													
United States, total.....	433	94	7.3	32.9	6.4	12.5	25.2	56.9	23.8	80.4	2.5	9.1	62.1
North Central.....	98	36	3.1	14.1	2.7	5.5	11.0	45.5	21.9	67.3	(D)	3.4	23.9
New England.....	29	3	0.2	0.9	0.2	0.3	0.6	1.9	0.6	2.5	0.1	0.2	1.3
Middle Atlantic.....	66	16	1.2	6.1	1.1	2.0	4.4	11.1	4.7	15.7	0.4	1.4	10.7
New York.....	31	2	0.2	0.8	0.1	0.3	0.5	1.6	0.6	2.2	0.1	0.2	2.0
New Jersey.....	18	8	0.5	2.6	0.4	0.8	1.8	4.7	1.2	5.8	0.2	0.4	3.2
Pennsylvania.....	17	6	0.6	2.7	0.5	1.0	2.1	4.8	2.9	7.7	0.2	0.7	5.5
South Atlantic.....	42	2	0.2	0.7	0.2	0.3	0.6	1.2	0.6	1.8	0.1	0.3	1.7
East South Central....	23	6	0.4	1.6	0.3	0.6	1.2	2.8	1.5	4.3	0.2	0.5	2.3
Kentucky.....	10	2	0.1	0.5	0.1	0.2	0.3	0.7	0.2	0.9	(D)	(D)	(D)
West South Central....	24	6	0.3	1.3	0.3	0.6	1.0	2.2	0.6	2.8	0.2	0.2	1.0
Pacific.....	138	24	1.9	7.9	1.7	3.1	6.4	14.2	4.6	18.7	(D)	(D)	(D)
California.....	122	22	1.8	7.5	1.6	3.0	6.1	13.3	4.3	17.5	(D)	1.9	11.2

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers (million dollars)	
		1967	1963
3269- --	POTTERY PRODUCTS, N.E.C., TOTAL.....	90.6	81.4
32690 --	Pottery products, n.e.c., including china decorating for the trade: Art, decorative and novelty pottery ware (including vases, lamp bases, figures, plaques, book-ends, garden pottery, ashtrays):		
32690 11	China and porcelain.....	23.6	15.1
32690 31	Earthenware and stoneware.....	23.2	21.2
32690 41	Stoneware table and kitchen articles, household and commercial (for serving, cooking, preparing, and storing food and drink).....	1.9	3.3
32690 61	Other pottery products, n.e.c.: Chemical, technical, and industrial pottery ware (including chemical stoneware and porcelain, pyrometric tubes, etc.).....	13.2	18.5
32690 71	Red unglazed earthenware (flower pots, etc.).....	5.8	5.8
32690 81	All other pottery products (including pyrometric cones, veritas rings, etc.).....	2.3	2.8
32690 91	China decorating for the trade.....	1.6	6.5
32690 00	Pottery products, n.e.c., n.s.k. (For companies with 10 or more employees. See Note.).....	12.2	8.1
32690 02	Pottery products, n.e.c., n.s.k. (For companies with less than 10 employees. See Note.).....	6.8	

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n.e.c. Not elsewhere classified. n.s.k. Not specified by kind.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(Not applicable to this report)



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**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

**Textile mill products • Apparel and leather • Chemicals, rubber, and plastics • Machinery and equipment • Primary metals • Intermediate metal products • Processed foods • Lumber, furniture, and paper products • Stone, clay, and glass products.**

A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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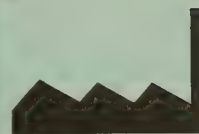
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# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

### Concrete block and brick

SIC Code 3271

**preliminary  
report**

The Concrete Block and Brick Industry includes establishments primarily engaged in manufacturing concrete building block and brick from a combination of cement and aggregate. Contractors engaged in concrete construction work are classified in the construction industries, and building materials dealers primarily engaged in mixing and delivering ready-mixed concrete in Industry 3273.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Concrete Block and Brick Industry amounted to \$556.0 million, an increase of 10

percent compared with 1963. Value added by manufacture at \$277.4 million in 1967 was 13 percent more than value added in 1963. Average employment in the industry showed a decrease of 10 percent from 1963 to a total of 21.4 thousand employees in 1967.

Of the \$556.0 million total value of shipments and other receipts of establishments classified as concrete block and brick, \$44.4 million were products primary to other industries; and \$76.4 million were receipts for miscellaneous activities. The industry shipments of primary products represented 91 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 92 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture  (million dollars)	Cost of materials  (million dollars)	Value of shipments  (million dollars)	Capital expenditures, new  (million dollars)	End-of-year inventories  (million dollars)	Specialization ratio  (percent)	Coverage ratio  (percent)
	Total  (number)	With 20 employees or more (number)	Number  (1,000)	Payroll  (million dollars)	Number  (1,000)	Man-hours  (millions)	Wages  (million dollars)							
INDUSTRY 3271.--CONCRETE BLOCK AND BRICK														
1967 Census....	1,602	352	21.4	132.1	14.8	31.1	78.1	277.4	278.7	556.0	30.7	61.5	91	87
1966 ASM <sup>1</sup> .....	(NA)	(NA)	24.4	137.7	17.0	35.7	82.5	296.7	294.9	585.9	33.3	66.3	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	24.7	133.8	17.5	37.5	80.3	284.8	294.9	578.4	28.0	62.1	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	23.5	121.0	16.2	36.3	73.4	258.5	271.6	530.0	24.3	60.5	(NA)	(NA)
1963 Census....	1,841	367	23.8	119.5	16.7	36.1	72.7	245.5	262.8	505.2	31.1	58.0	92	84
1962 ASM <sup>1</sup> .....	(NA)	(NA)	22.3	110.7	16.2	37.4	67.4	215.3	243.6	459.1	20.5	50.0	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	23.2	110.6	17.0	37.7	67.0	214.4	247.7	460.7	21.2	49.3	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	23.9	111.8	17.6	38.1	68.1	212.4	246.8	457.4	24.8	49.8	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	23.5	106.1	17.4	37.4	66.4	221.4	240.2	458.8	22.9	48.7	(NA)	(NA)
1958 Census <sup>2</sup> ...	1,796	336	22.8	98.1	16.4	32.9	61.3	190.4	224.3	413.7	22.8	46.6	90	83

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued September 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE**    **Maurice H. Stans, Secretary**  
**Rocco C. Siciliano, Under Secretary**  
**BUREAU OF THE CENSUS**



The total value of concrete block and brick shipped by all producers in 1967 was \$499.7 million of which \$435.1 million, or 87 percent, were shipped by plants classified in industry 3271, Concrete Block and Brick, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 84 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)						
INDUSTRY 3271.--CONCRETE BLOCK AND BRICK													
United States, total.....	1,602	352	21.4	132.1	14.8	31.1	78.1	277.4	278.7	556.0	30.7	23.8	245.5
New England.....	84	14	1.0	7.1	0.6	1.4	4.1	15.3	13.2	28.7	1.6	1.2	13.4
Middle Atlantic.....	262	56	3.8	24.6	2.7	6.1	15.3	49.4	53.9	102.4	5.5	4.5	46.6
New Jersey.....	58	11	0.7	4.9	0.5	1.0	2.7	10.9	12.9	23.7	1.0	1.1	12.6
East North Central....	393	65	4.6	32.3	3.1	6.5	18.6	68.3	69.6	138.0	6.4	5.1	58.5
Ohio.....	94	16	1.3	8.8	0.8	1.8	4.8	17.2	19.2	36.5	1.7	1.5	15.4
Michigan.....	105	18	1.2	9.1	0.8	1.7	5.0	19.8	19.1	39.0	1.6	1.4	15.9
West North Central....	163	31	1.9	12.6	1.3	2.6	7.5	24.4	23.6	47.9	3.2	1.9	18.9
South Atlantic.....	275	88	4.6	23.7	3.1	6.5	13.2	55.0	54.8	109.7	5.5	4.8	42.8
Delaware.....	8	2	0.1	0.7	0.1	0.2	0.5	1.3	1.5	2.7	0.1	0.1	0.9
Virginia.....	40	16	0.7	4.0	0.5	1.1	2.2	8.6	7.8	16.5	0.8	0.8	7.3
North Carolina.....	53	19	0.9	4.0	0.6	1.2	2.4	9.4	10.6	19.9	1.1	0.9	7.5
South Carolina.....	22	7	0.4	1.7	0.3	0.6	1.1	3.4	3.5	6.9	0.7	0.4	2.7
Georgia.....	36	15	0.7	3.5	0.5	1.0	1.9	8.1	9.5	17.7	0.6	0.7	6.2
Florida.....	63	14	0.9	4.7	0.5	1.1	2.2	13.4	10.1	23.5	1.5	0.9	7.9
East South Central....	126	32	1.7	8.5	1.3	2.6	5.1	17.4	19.4	37.1	1.8	1.9	15.2
Alabama.....	22	10	0.4	1.8	0.3	0.5	1.1	4.0	5.0	8.9	0.4	0.4	3.3
Mississippi.....	17	2	0.1	0.5	0.1	0.2	0.4	1.2	1.5	2.7	0.2	0.2	0.9
West South Central....	96	24	1.2	6.2	0.9	2.0	4.0	14.0	14.3	28.5	1.4	1.3	12.2
Texas.....	50	18	0.8	3.9	0.6	1.2	2.3	9.3	8.9	18.4	0.8	0.8	7.3
Mountain.....	79	13	0.9	5.3	0.6	1.3	3.3	11.8	10.1	22.2	(D)	1.4	16.1
New Mexico.....	12	1	0.1	0.5	0.1	0.1	0.3	1.2	1.2	2.3	0.1	0.3	2.0
Arizona.....	15	4	0.3	1.8	0.2	0.4	1.4	4.5	4.5	9.3	(D)	0.3	6.1
Utah.....	7	2	0.1	0.5	0.1	0.2	0.3	1.0	0.9	1.9	0.1	0.2	1.2
Pacific.....	124	29	1.6	11.8	1.1	2.1	6.9	21.8	19.8	41.6	(D)	1.7	22.0
California.....	81	19	1.1	7.7	0.7	1.4	4.5	14.6	12.1	26.8	1.2	1.2	16.6

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3271- --	CONCRETE BLOCK AND BRICK, TOTAL.....		(X)	499.7	(X)	472.4
32710 13	Structural block: Lightweight aggregate (cinder, expanded slag, pumice, expanded clays, shales, slates, etc.).....	Million blocks. (8" x 8" x 16" equivalent)...				
32710 16	Heavyweight aggregate.....	..do.....	(S)	266.3	1,216.5	261.5
32710 18	Decorative block (such as screen block; split block, slump block, shadowal block, etc.).....	..do.....	555.0	114.6	845.9	167.0
32710 51	Brick.....	Million bricks.	63.6	14.6	(NA)	(NA)
32710 00	Concrete block and brick, n.s.k. (For companies with 10 or more employees. See Note.).....		479.7	15.4	424.1	13.4
32710 02	Concrete block and brick, n.s.k. (For companies with less than 10 employees. See Note.).....		(X)	52.4	(X)	30.5
			(X)	36.4	(X)	(X)

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

(S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3271.--CONCRETE BLOCK AND BRICK					
	Materials, parts, containers, and supplies, total.....		(X)	214.9	(X)	197.1
324101	Portland cement.....	1,000 (376 lb. barrels).....	15,238.1	60.7	13,896.6	55.4
144201	Sand and gravel.....	1,000 short tons..	18,011.5	28.3	18,121.6	28.1
142011	Crushed or broken stone.....	..do.....	6,678.8	16.3	(NA)	(NA)
	Steel:					
331091	Wire strand and bars or rods, high strength, stress relined...	..do.....	3.5	0.9	2.1	0.5
331092	Welded wire concrete reinforcing mesh.....	..do.....	5.4	0.9	4.5	0.6
331009	Concrete reinforcing bars.....	..do.....	8.3	1.5	(S)	1.2
970099	All other materials and components, parts, containers, and supplies.....		(X)	45.9	(X)	49.4
972000	Materials, components, parts, containers, and supplies, n.s.k....		(X)	60.4	(X)	61.9

(NA) Not available. n.s.k. Not specified by kind. (S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review. (X) Not applicable.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3271, these small establishments accounted for approximately 5 percent of payrolls and 12 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

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"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





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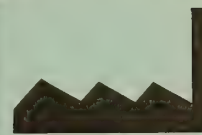
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# 1967 CENSUS OF MANUFACTURES



MC67(P)-32D-2

## INDUSTRY SERIES

**preliminary  
report**

### Concrete products, n.e.c.

SIC Code 3272

The Concrete Products, Except Block and Brick, Industry includes establishments primarily engaged in manufacturing concrete products, except block and brick, from a combination of cement and aggregate. Contractors engaged in concrete construction work are classified in the construction industries, and building materials dealers primarily engaged in mixing and delivering ready-mixed concrete in industry 3273.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classi-

fied in the Concrete Products, N.E.C., Industry amounted to \$1,187.5 million, an increase of 28 percent compared with 1963. Value added by manufacture at \$715.7 million in 1967 was 33 percent more than value added in 1963. Average employment in the industry showed an increase of 7 percent from 1963 to a total of 56.2 thousand employees in 1967.

Of the \$1,187.5 million total value of shipments and other receipts of establishments classified as concrete products, n.e.c., \$35.7 million were products primary to other industries; and \$78.7 million were receipts for miscellaneous activities. The industry shipments of primary products represented 97 percent of the total manufactured product shipments, primary and secondary. This

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3272.—CONCRETE PRODUCTS, N.E.C.														
1967 Census....	3,414	801	56.2	347.7	45.0	93.3	245.3	715.7	481.5	1,187.5	73.1	157.5	97	94
1966 ASM <sup>1</sup> .....	(NA)	(NA)	60.5	338.5	46.7	95.2	238.1	691.9	485.0	1,189.7	67.9	153.7	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	58.3	314.2	45.8	95.2	223.8	636.3	454.4	1,083.1	60.5	152.1	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	54.4	283.5	42.5	89.7	201.7	591.8	407.4	977.5	50.8	144.8	(NA)	(NA)
1963 Census....	3,451	716	52.3	266.7	41.1	87.3	190.9	540.0	387.4	925.7	43.5	126.1	94	94
1962 ASM <sup>1</sup> .....	(NA)	(NA)	49.3	241.8	39.3	85.6	173.4	499.5	373.5	871.6	36.8	123.7	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	47.9	222.9	38.1	83.1	156.3	470.9	354.9	822.4	*36.3	123.5	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	48.6	222.4	39.0	85.6	157.5	460.2	366.6	822.5	32.3	118.5	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	47.2	211.8	38.0	79.3	150.9	438.3	358.6	795.2	38.9	117.7	(NA)	(NA)
1958 Census <sup>2</sup> ...	3,461	619	46.3	200.2	36.3	73.6	141.6	391.4	332.2	720.1	44.3	110.2	94	94

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 2 and 2, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued December 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary****Rocco C. Siciliano, Under Secretary****Harold C. Passer, Assistant Secretary for Economic Affairs****BUREAU OF THE CENSUS George Hay Brown, Director**

percent, called the specialization ratio for the industry, was 94 percent in 1963.

The total value of concrete products, n.e.c., shipped by all producers in 1967 was \$1,141.3 million of which \$1,073.1 million, or 94 percent, were shipped by plants classified in industry 3272, Concrete Products, N.E.C., while the remainder was shipped by plants classified in other indus-

tries. This percent, called the coverage ratio, was also 94 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.



TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
	INDUSTRY 3272.--CONCRETE PRODUCTS, N.E.C.												
United States, total.....	3,414	801	56.2	347.7	45.0	93.3	245.3	715.7	481.5	1,187.5	73.1	52.3	540.0
New England.....	173	34	2.2	14.4	1.8	3.7	10.1	30.1	17.3	47.4	2.5	2.1	24.1
Massachusetts.....	72	14	1.0	6.6	0.8	1.7	4.7	12.9	6.9	19.7	1.1	1.1	13.1
Rhode Island.....	8	2	0.1	1.0	0.1	0.2	0.8	2.3	0.9	3.1	0.2	0.1	1.5
Connecticut.....	57	10	0.7	4.8	0.6	1.2	3.4	10.2	7.5	17.6	0.9	0.6	7.0
Middle Atlantic.....	449	120	7.4	50.1	5.9	12.6	35.1	93.8	61.6	153.5	6.6	6.6	71.1
New York.....	172	46	2.4	17.3	1.9	4.4	12.3	29.6	21.3	49.9	1.8	2.2	26.2
New Jersey.....	85	34	2.7	18.4	2.1	4.4	12.5	38.6	21.6	59.8	1.7	2.0	24.6
Pennsylvania.....	192	40	2.3	14.4	1.9	3.8	10.3	25.6	18.6	43.8	3.1	2.4	20.3
East North Central...	784	156	11.2	77.5	8.7	18.2	53.0	163.7	103.6	266.6	11.2	9.7	116.4
Ohio.....	208	44	3.2	22.4	2.4	5.1	13.6	42.8	26.8	69.4	3.3	2.8	31.8
Indiana.....	137	17	1.5	9.0	1.2	2.3	6.4	20.0	12.1	31.9	1.3	1.2	11.1
Illinois.....	165	41	2.6	18.4	2.0	4.1	12.9	39.4	24.7	63.3	2.5	2.5	31.0
Michigan.....	173	31	2.4	16.9	1.9	4.0	11.9	39.3	25.8	66.3	2.5	1.9	28.1
Wisconsin.....	101	23	1.5	10.9	1.3	2.6	8.1	22.3	14.2	35.8	1.6	1.3	14.4
West North Central...	346	72	4.9	29.4	4.0	8.6	21.3	64.6	40.9	104.7	4.6	4.5	43.8
Minnesota.....	105	27	1.8	11.9	1.5	3.4	9.0	26.6	17.7	43.9	2.1	1.4	15.1
Iowa.....	78	16	1.0	6.0	0.8	1.8	4.2	12.6	7.8	19.9	0.9	1.0	10.1
Missouri.....	77	9	0.6	3.2	0.5	0.9	2.2	7.7	3.9	11.5	(D)	0.8	7.3
North Dakota.....	12	2	0.1	0.7	0.1	0.2	0.6	1.7	1.1	2.8	(D)	0.1	1.3
South Dakota.....	13	3	0.2	1.5	0.2	0.4	1.2	2.9	2.0	5.0	0.3	(D)	(D)
Nebraska.....	26	6	0.6	3.1	0.6	1.1	2.4	6.7	4.1	10.8	0.5	0.5	3.3
Kansas.....	35	9	0.5	3.0	0.4	0.8	1.7	6.4	4.4	10.7	0.2	(D)	(D)
South Atlantic.....	607	165	11.7	59.5	9.4	19.7	41.9	122.5	85.0	205.1	29.0	11.1	98.5
Maryland.....	59	21	1.4	8.2	1.1	2.3	6.0	19.9	13.0	32.6	1.2	1.3	16.6
Virginia.....	70	23	1.9	10.2	1.5	3.2	7.1	19.5	14.3	33.5	1.3	2.1	20.0
West Virginia.....	18	6	0.4	1.7	0.3	0.6	1.3	3.2	2.8	5.9	0.3	0.2	1.8
North Carolina.....	80	23	1.7	8.5	1.3	2.8	5.5	16.9	11.3	28.0	0.8	1.4	10.0
South Carolina.....	37	11	0.7	3.4	0.6	1.2	2.4	7.6	4.3	11.9	0.4	0.6	6.0
Florida.....	227	53	3.6	17.6	3.0	6.3	12.9	35.8	26.1	60.5	(D)	3.9	30.7
East South Central...	225	56	3.3	16.5	2.7	5.6	11.6	37.4	27.7	64.0	2.4	3.0	27.3
Alabama.....	87	18	1.0	4.8	0.8	1.7	3.4	10.1	7.9	17.9	0.8	0.9	7.1
Mississippi.....	33	12	0.6	3.2	0.5	1.2	2.4	8.9	6.0	14.4	0.7	0.5	6.8
West South Central...	318	79	6.1	31.5	5.0	10.0	22.7	67.7	51.3	117.3	6.0	5.8	51.7
Arkansas.....	27	6	0.3	1.5	0.3	0.6	1.2	2.4	2.2	4.5	0.4	0.3	2.0
Louisiana.....	69	14	1.6	8.8	1.4	2.7	7.2	20.5	16.4	37.3	1.2	1.0	9.5
Oklahoma.....	36	6	0.4	2.8	0.4	0.8	1.9	5.6	3.5	8.7	0.4	0.4	4.5
Texas.....	186	53	3.8	18.4	2.9	5.9	12.3	39.2	29.3	66.8	4.0	4.1	35.8
Mountain.....	148	35	2.5	16.2	2.0	4.1	11.7	32.5	22.7	54.3	3.1	2.4	25.3
Montana.....	12	5	0.3	1.3	0.2	0.5	1.0	2.8	2.2	4.8	(D)	0.2	1.8
Colorado.....	45	9	0.8	5.7	0.7	1.4	4.3	10.9	6.2	16.8	0.6	0.7	7.6
Arizona.....	32	7	0.5	3.6	0.4	0.8	2.5	6.7	5.9	12.1	1.3	0.5	5.3
Utah.....	20	7	0.4	2.7	0.3	0.7	1.9	5.4	3.1	8.5	0.5	0.5	5.2
Pacific.....	364	84	7.0	52.6	5.4	10.8	38.0	103.2	71.5	174.7	7.8	7.1	81.6
Washington.....	74	15	1.4	10.6	1.2	2.3	8.3	18.0	15.8	33.3	1.2	1.4	14.4
Oregon.....	44	7	0.5	3.2	0.4	0.8	2.5	5.7	4.3	10.0	(D)	0.6	7.6
California.....	238	58	4.9	37.0	3.7	7.3	25.6	76.1	48.9	125.5	5.8	4.9	57.6

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3272- --	CONCRETE PRODUCTS, N.E.C. TOTAL.....		(X)	1,141.3	(X)	861.9
32721 --	Concrete pipe, total.....		(X)	396.5	(X)	369.3
32721 07	Prestressed pipe.....	Million lin. ft.	<sup>e</sup> 4.4	59.5	4.1	60.4
	Concrete pipe (except prestressed), reinforced and non-reinforced:					
	Culvert pipe:					
32721 13	Reinforced.....	1,000 short tons <sup>1</sup> .....	3,410.0	100.3	<sup>1</sup> 22.6	98.5
32721 15	Nonreinforced.....	...do.....	<sup>e</sup> 360.6	8.9	<sup>1</sup> 8.0	12.3
	Sewer pipe:					
	Reinforced:					
32721 22	24 inches or more.....	...do.....	1,809.0	60.1	<sup>1</sup> 7.0	62.7
32721 23	Less than 24 inches.....	...do.....	724.3	26.0	<sup>1</sup> 9.2	28.9
	Nonreinforced:					
32721 26	15 inches or more.....	...do.....	<sup>e</sup> 265.2	7.5	<sup>1</sup> 4.3	7.0
32721 27	Less than 15 inches.....	...do.....	<sup>e</sup> 373.4	12.8	<sup>1</sup> 23.7	17.6
32721 34	Pressure pipe.....	Million lin. ft.....	2.7	34.6	(S)	20.1
32721 41	Irrigation pipe.....	1,000 short tons.....	308.9	8.4	<sup>1</sup> 11.1	10.3
32721 98	Other concrete pipe (such as drain tile and conduits).....	...do.....	<sup>e</sup> 884.5	25.7	<sup>1</sup> 50.5	17.4
32721 00	Concrete pipe, n.s.k.....		(X)	52.7	(X)	34.0
32722 --	Precast concrete products, total <sup>2</sup> .....		(X)	343.7	(X)	297.3
	Roof and floor units:					
32722 13	Slabs and tile.....	Million sq.ft.	(NA)	47.4	<sup>2</sup> 569	30.6
32722 17	Joists and beams.....	Million lin. ft.....	(NA)	6.9	<sup>2</sup> 113	8.1
32722 23	Architectural wall panels.....	Million sq.ft.	(NA)	71.4	<sup>2</sup> 303	42.5
32722 25	Piling, post, and poles.....	Million lin. ft.....	(NA)	1.2	<sup>2</sup> 73	2.9
32722 27	Cast stone (products for architectural purposes (except architectural wall panels) such as windowsills, ashlar, coping, lintels and other trim).....		(X)	19.8	(X)	23.1
32722 29	Other precast concrete construction or building products (including prefabricated housing components, reinforced columns, etc.).....		(X)	28.6	(X)	32.9
32722 33	Burial vaults.....	1,000.....	<sup>e</sup> 534.0	44.1	704.3	50.7
32722 35	Burial boxes.....	...do.....	175.1	7.4	167.7	6.7
32722 41	Silo staves.....		<sup>e</sup> 12,050.0	17.8	(S)	15.9
32722 61	Septic tanks.....	1,000.....	204.9	17.1	335.2	28.3
32722 71	Dry-mixed concrete materials (including prepackaged sand, gravel and cement, mortar and cement premixes).....	1,000 short tons.....	1,452.7	27.1	524.5	13.0
32722 98	Other precast concrete products, except construction or building products (including garden furniture, storage tanks, laundry trays, gravestones, catchbasin covers, shower receptors, etc.).....		(X)	21.2	(X)	17.3
32722 00	Precast concrete products, n.s.k.....		(X)	33.7	(X)	25.2
32723 --	Prestressed concrete products, except prestressed pipe, total <sup>2</sup> ....		(X)	217.6	(X)	140.9
32723 11	Single tees, double tees and channels.....	Million sq.ft.	<sup>e</sup> 50.2	55.7	<sup>2</sup> 1.0	43.5
32723 23	Piling, bearing piles, and sheet piles.....	Million lin. ft.....	<sup>e</sup> 5.2	20.1	<sup>2</sup> 2,097	45.7
32723 25	Bridge beams.....	...do.....	<sup>e</sup> 2.8	35.9		
32723 27	Joists, girders and beams (other than bridge beams).....	...do.....	(NA)	8.4		
32723 31	Solid and hollow cored slabs and panels.....	Million sq.ft.	(NA)	36.7	<sup>2</sup> 632	24.3
32723 75	Net weight of prestressed concrete products shipped.....	1,000 short tons.....	(S)	(X)	(NA)	(X)
32723 98	Other prestressed concrete products (such as arches, columns, etc.).....	...do.....	<sup>e</sup> 598.5	28.6	(S)	11.2
32723 00	Prestressed concrete products, n.s.k.....		(X)	32.2	(X)	16.2

See footnotes at end of table.

**TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued**

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3272- --	CONCRETE PRODUCTS, N.E.C.--Continued					
32720 00	Concrete products, n.s.k. (For companies with 10 or more employees. See Note.).....		(X)	112.8	(X)	54.4
32720 02	Concrete products, n.s.k. (For companies with less than 10 employees. See Note.).....		(X)	70.7	(X)	(X)

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

<sup>e</sup> From 10 to 30 percent of this figure was estimated. (NA) Not available. n.e.c. Not elsewhere classified, n.s.k. Not specified by kind.  
(S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review.

(X) Not applicable.

<sup>1</sup> In 1963 the unit of measure was million linear feet.

<sup>2</sup> In 1963 the unit of measure was thousand short tons.

**TABLE 4. Materials Consumed, by Kind: 1967 and 1963**

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3272.--CONCRETE PRODUCTS, N.E.C.					
	Materials, parts, containers and supplies, total.....		(X)	415.0	(X)	337.2
324101	Portland cement.....	Million (376-lb. barrels).....	20.5	82.9	17.1	68.1
144201	Sand and gravel.....	1,000 short tons.	16,981.7	32.0	15,745.2	30.6
142011	Crushed or broken stone.....	...do.....	5,409.5	13.4	(NA)	(NA)
	Steel:					
331091	Wire strand and bars or rods, high strength, stress relieved..	...do.....	202.3	39.9	124.6	23.9
331092	Welded wire concrete reinforcing mesh.....	...do.....	179.1	34.4	182.5	32.7
331009	Concrete reinforcing bars.....	...do.....	111.0	16.9	117.9	16.5
970099	All other materials and components, parts containers and supplies.....		(X)	104.4	(X)	93.7
973000	Materials components, parts, containers, and supplies, n.s.k.....		(X)	91.1	(X)	71.7

(NA) Not available. n.e.c. Not elsewhere classified. n.s.k. Not specified by kind. (X) Not applicable.



## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3272, these small establishments accounted for approximately 5 percent of payrolls and 6 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.

# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

**U.S. DEPARTMENT OF COMMERCE**  
**Bureau of the Census**  
Washington, D.C. 20233

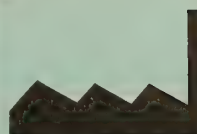
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U.S. DEPARTMENT OF COMMERCE

OFFICIAL BUSINESS





# 1967 CENSUS OF MANUFACTURES



MC67(P)-32D-3

## INDUSTRY SERIES

**preliminary  
report**

### Ready-mixed concrete

SIC Code 3273

The Ready-Mixed Concrete Industry includes establishments primarily engaged in manufacturing Portland cement concrete, manufactured and delivered to a purchaser in a plastic and unhardened state. This industry includes production and sale of central-mixed concrete, shrink-mixed concrete and transit-mixed concrete.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Ready-Mixed Concrete Industry amounted to \$2,697.9 million, an increase of 18 percent compared with 1963. Value added by

manufacture at \$1,155.5 million in 1967 was 18 percent more than value added in 1963. Average employment in the industry showed an increase of 5 percent from 1963 to a total of 75.3 thousand employees in 1967.

Of the \$2,697.9 million total value of shipments and other receipts of establishments classified as ready-mixed concrete, \$208.5 million were products primary to other industries; and \$234.6 million were receipts for miscellaneous activities. The industry shipments of primary products represented 92 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was also 92 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)
INDUSTRY 3273.--READY-MIXED CONCRETE														
1967 Census....	4,767	1,152	75.3	512.9	49.8	101.9	311.4	1,155.5	1,543.2	2,697.9	137.3	88.2	92	98
1966 ASM <sup>1</sup> .....	(NA)	(NA)	75.4	487.9	49.9	101.4	295.4	1,051.3	1,483.8	2,527.8	143.8	76.2	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	76.2	465.6	50.2	102.4	279.2	1,066.7	1,447.4	2,511.5	135.6	70.1	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	72.3	431.8	46.8	97.4	259.0	996.6	1,319.7	2,310.3	*105.7	71.9	(NA)	(NA)
1963 Census....	4,621	1,021	71.5	410.5	46.1	96.2	245.0	982.0	1,308.0	2,292.5	106.0	64.5	92	98
1962 ASM <sup>1</sup> .....	(NA)	(NA)	66.7	381.7	48.0	99.2	245.3	786.5	1,160.3	1,953.7	91.5	60.8	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	65.3	360.8	45.8	96.3	228.5	751.6	1,137.2	1,889.3	75.9	62.6	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	64.8	344.5	46.8	96.9	214.3	770.8	1,101.1	1,869.1	70.3	63.7	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	67.6	345.1	48.0	96.2	215.1	770.2	1,134.5	1,903.0	83.1	63.5	(NA)	(NA)
1958 Census <sup>2</sup> ...	3,657	949	62.1	303.1	44.2	88.4	202.0	679.4	1,008.8	1,687.2	71.6	60.4	92	97

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 2 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued December 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**

The total value of ready-mixed concrete shipped by all producers in 1967 was \$2,297.1 million of which \$2,254.8 million, or 98 percent, were shipped by plants classified in industry 3273, Ready-Mixed Concrete, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was also 98 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

## 1967 CENSUS OF MANUFACTURES

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TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3273.--READY-MIXED CONCRETE													
United States, total.....	4,767	1,152	75.3	512.9	49.8	101.9	311.4	1,155.5	1,543.2	2,697.9	137.3	71.5	982.0
New England.....	161	53	3.3	24.6	2.2	4.8	15.7	59.1	60.7	119.8	6.0	2.7	47.0
Maine.....	23	9	0.4	2.4	0.3	0.6	1.5	4.6	4.4	9.0	0.6	0.4	3.8
New Hampshire.....	13	4	0.2	1.4	0.1	0.3	0.8	3.6	3.6	9.2	0.5	0.2	2.3
Vermont.....	10	4	0.2	1.8	0.2	0.4	1.1	4.4	3.8	8.2	0.6	0.1	1.8
Massachusetts.....	60	18	1.5	11.7	1.0	2.2	7.9	27.5	29.8	57.4	2.8	1.1	20.3
Rhode Island.....	13	3	0.2	1.5	0.1	0.3	1.0	3.8	3.6	7.4	0.2	0.1	1.5
Connecticut.....	42	15	0.7	5.8	0.5	1.0	3.4	13.2	15.5	28.6	1.2	0.8	17.3
Middle Atlantic.....	498	144	10.0	81.4	6.4	13.2	47.8	168.9	201.4	371.4	16.3	8.7	132.7
New York.....	222	63	5.2	47.4	3.1	6.4	26.0	93.7	98.2	191.4	9.3	3.5	54.3
New Jersey.....	85	31	1.7	13.5	1.0	2.1	7.5	29.3	41.9	72.6	2.6	2.1	35.5
Pennsylvania.....	191	50	3.0	20.4	2.2	4.6	14.2	45.9	61.4	107.5	4.4	3.1	43.0
East North Central....	1,016	225	14.6	112.0	9.3	19.0	65.7	250.6	338.7	587.9	29.3	12.6	191.5
Ohio.....	253	70	4.3	32.4	2.6	5.3	18.6	68.2	93.1	161.0	8.6	3.5	53.1
Indiana.....	138	35	2.3	16.2	1.3	2.7	8.2	36.3	45.3	81.6	4.6	2.0	26.5
Illinois.....	264	40	3.0	23.5	2.1	4.2	15.7	58.3	82.0	139.9	7.0	3.0	48.6
Michigan.....	219	49	3.2	25.0	2.0	4.1	14.2	57.9	79.4	136.9	5.5	2.5	41.7
Wisconsin.....	142	31	2.0	14.9	1.3	2.6	9.0	29.8	38.9	68.5	3.7	1.6	21.6
West North Central....	645	112	7.1	43.4	5.2	10.1	29.6	97.5	133.0	230.3	11.7	6.1	82.1
Minnesota.....	115	17	1.2	8.2	0.9	1.7	5.3	17.4	24.4	41.8	1.7	(D)	(D)
Iowa.....	156	20	1.4	9.1	1.1	2.1	6.1	22.4	27.6	49.9	2.9	1.1	15.2
Missouri.....	143	31	2.2	13.3	1.6	3.1	9.4	27.5	41.4	68.9	2.9	1.9	23.9
North Dakota.....	25	4	0.2	1.3	0.2	0.3	0.9	3.1	2.9	6.0	0.4	0.1	1.7
South Dakota.....	35	2	0.2	1.0	0.2	0.3	0.7	2.6	3.3	5.9	0.2	0.3	3.5
Nebraska.....	73	15	0.7	4.2	0.6	1.2	3.0	10.4	15.4	25.8	0.8	(D)	(D)
Kansas.....	98	23	1.1	6.4	0.8	1.5	4.3	14.2	17.9	32.1	2.8	0.9	10.8
South Atlantic.....	602	204	12.4	68.4	7.9	16.9	39.4	167.9	235.9	403.8	24.2	11.8	138.2
Delaware.....	9	5	0.3	1.7	0.2	0.4	1.3	4.2	4.8	9.0	0.4	0.3	3.7
Maryland.....	50	17	1.1	7.3	0.6	1.3	3.1	19.8	24.8	44.6	0.9	0.9	14.2
District of Columbia	6	5	0.4	2.7	0.3	0.6	2.1	5.3	9.5	14.8	(D)	0.4	6.4
Virginia.....	88	23	1.7	9.7	1.2	2.4	6.0	24.8	34.8	60.0	3.4	1.7	23.1
West Virginia.....	35	8	0.5	3.0	0.4	0.7	2.1	5.7	8.0	13.7	0.5	0.5	5.0
North Carolina.....	103	27	1.6	8.2	1.0	2.1	4.4	19.8	27.6	47.4	2.2	1.5	14.7
South Carolina.....	56	16	1.3	6.8	1.0	2.2	4.7	15.5	19.1	34.5	2.4	0.7	5.9
Georgia.....	100	40	2.2	10.5	1.5	3.2	6.6	24.4	37.2	61.5	5.3	1.9	16.8
Florida.....	155	63	3.2	18.4	1.8	4.0	9.2	48.2	70.2	118.5	(D)	4.0	48.5
East South Central....	318	72	5.1	27.2	3.5	7.2	16.5	65.3	89.8	155.6	8.2	4.6	51.6
Kentucky.....	92	17	1.0	5.8	0.7	1.4	3.2	14.9	20.8	36.0	1.7	1.0	11.9
Tennessee.....	89	26	1.7	9.5	1.2	2.6	6.0	23.1	31.7	54.7	3.0	1.5	18.1
Alabama.....	76	16	1.3	6.9	0.9	1.8	4.1	15.1	19.4	35.1	2.1	1.3	14.3
Mississippi.....	61	14	1.0	5.0	0.7	1.4	3.1	12.2	17.9	29.9	1.4	0.8	7.3
West South Central....	558	117	8.2	46.4	5.8	12.8	30.7	116.4	180.0	296.4	17.2	8.6	100.9
Arkansas.....	59	8	0.6	3.1	0.4	0.9	2.1	8.2	9.6	17.8	(D)	0.6	7.0
Louisiana.....	90	28	1.8	10.4	1.2	2.6	6.4	23.8	37.6	61.3	4.7	1.4	14.0
Oklahoma.....	114	15	1.1	5.8	0.7	1.6	3.6	14.6	19.0	33.6	(D)	1.2	14.9
Texas.....	295	66	4.7	27.1	3.4	7.8	18.6	69.8	113.8	183.7	10.4	5.4	65.0
Mountain.....	328	64	4.3	28.6	3.0	5.7	18.2	56.3	68.0	124.0	7.1	4.9	62.9
Montana.....	43	2	0.3	1.6	0.2	0.3	1.1	3.6	3.7	7.3	0.4	0.2	2.6
Idaho.....	36	8	0.5	2.6	0.4	0.7	1.8	6.0	5.6	11.7	0.4	0.4	4.1
Wyoming.....	21	3	0.2	1.2	0.2	0.4	1.0	2.6	2.2	4.8	0.2	0.2	2.9
Colorado.....	76	15	1.0	6.9	0.6	1.2	3.6	14.8	20.5	35.3	1.6	1.0	13.8
New Mexico.....	40	4	0.4	2.1	0.3	0.5	1.3	4.4	5.0	9.3	0.8	0.4	5.6
Arizona.....	55	13	1.1	8.4	0.8	1.6	5.9	12.0	17.2	29.0	3.0	1.5	16.1
Utah.....	39	11	0.6	3.7	0.4	0.8	2.4	9.0	9.0	17.9	0.5	0.7	8.2
Nevada.....	18	8	0.3	2.1	0.2	0.3	1.2	4.0	4.8	8.7	0.2	0.5	9.7
Pacific.....	641	160	10.4	80.9	6.5	12.2	47.7	173.5	235.7	408.7	17.3	11.4	175.0
Washington.....	96	33	2.4	18.2	1.7	3.3	12.8	40.1	39.1	79.0	3.8	1.9	24.7
Oregon.....	83	12	1.2	8.6	0.9	1.7	6.1	18.2	17.2	35.3	2.6	1.2	16.3
California.....	446	109	5.2	49.3	3.5	6.4	26.0	106.0	167.1	272.8	9.9	7.8	124.3

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3273- --	READY-MIXED CONCRETE, TOTAL.....	Million cu.yds.	<sup>e</sup> 155.7	2,297.1	<sup>e</sup> 149.5	1,970.7
32730 11	Ready-mixed concrete.....	...do.....	<sup>e</sup> 155.7	2,297.1	<sup>e</sup> 149.5	1,970.7

<sup>e</sup>From 10 to 30 percent of this figure was estimated.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3273.--READY-MIXED CONCRETE					
	Materials, parts, containers, and supplies, total.....		(X)	1,331.1	(X)	1,155.5
324101	Portland cement.....	Million (376 lbs. barrels)...	161.2	615.4	132.7	502.2
144201	Sand and gravel.....	1,000 s. tons...	151,331.3	267.3	166,261.7	283.8
142011	Crushed or broken stone.....	...do.....	41,814.7	88.8		
970099	All other materials and components, parts, containers and supplies.....		(X)	112.7	(X)	104.3
973000	Materials, components, parts, containers, and supplies, n.s.k....		(X)	246.9	(X)	265.2

n.s.k. Not specified by kind. (X) Not applicable.

### SCOPE AND COVERAGE

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As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

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More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

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# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

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The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

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In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

**U.S. DEPARTMENT OF COMMERCE**  
**Bureau of the Census**  
Washington, D.C. 20233

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# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

### Lime

SIC Code 3274

## preliminary report

The Lime Industry includes establishments primarily engaged in manufacturing quicklime, hydrated lime, and "dead-burned" dolomite from limestone, dolomite shells, or other substances.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Lime Industry amounted to \$176.5 million, an increase of 7 percent compared with 1963. Value added by manufacture at \$100.1 million in 1967 was 5 percent more than value added in 1963. Average employment in the industry

remained approximately the same as the number reported for 1963.

Of the \$176.5 million total value of shipments and other receipts of establishments classified as lime producers, \$26.3 million were products primary to other industries; and \$1.7 million were receipts for miscellaneous activities. The industry shipments of primary products represented 85 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 82 percent in 1963.

The total value of lime shipped by all producers in 1967 was \$160.6 million of which \$148.5 million, or 93 percent, were shipped by plants classified

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3274.--LIME														
1967 Census....	116	71	6.8	42.6	5.7	12.0	33.4	100.1	76.8	176.5	17.7	15.8	85	93
1966 ASM <sup>1</sup> .....	(NA)	(NA)	7.5	49.1	6.2	13.6	38.1	117.4	80.3	197.9	*22.1	17.4	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	7.3	44.1	5.9	12.6	32.6	110.1	84.6	193.1	15.7	16.4	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	7.0	41.8	5.8	12.4	31.4	103.3	84.0	187.2	21.4	13.9	(NA)	(NA)
1963 Census.....	125	68	6.8	38.9	5.4	11.4	28.5	95.1	69.0	164.4	14.7	14.0	82	94
1962 ASM <sup>1</sup> .....	(NA)	(NA)	6.9	38.6	5.7	11.4	29.2	96.8	60.3	155.9	*12.0	17.8	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	7.2	38.3	6.0	11.8	28.7	99.7	58.3	157.0	7.0	15.6	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	7.6	39.0	6.2	12.4	29.1	97.8	60.1	156.7	*12.1	14.5	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	7.4	36.3	6.2	13.1	28.1	91.7	65.6	157.7	*12.7	13.3	(NA)	(NA)
1958 Census <sup>2</sup> ...	137	76	7.2	32.8	6.1	12.5	25.5	73.6	57.5	130.9	6.4	12.0	83	95

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

basis of a consistency review.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 8 and 10, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary  
Rocco C. Siciliano, Under Secretary  
BUREAU OF THE CENSUS George Hay Brown, Director



in industry 3274, Lime, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 94 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1,

2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3274, --LIME													
United States, total.....	116	71	6.8	42.6	5.7	12.0	33.4	100.1	76.8	176.5	17.7	6.8	95.1
Northeast.....	18	11	1.4	9.7	1.2	2.4	7.5	17.3	17.4	34.5	3.6	1.6	18.7
East North Central.....	30	20	1.6	10.6	1.3	2.9	8.4	30.4	25.2	55.7	3.9	1.9	32.3
Ohio.....	13	10	1.1	7.1	0.9	2.0	5.4	19.7	11.6	31.2	3.1	1.5	24.2
West North Central.....	10	5	1.1	7.2	0.9	1.9	5.6	15.8	8.7	24.6	3.4	1.0	12.7
South.....	36	22	2.0	10.2	1.7	3.6	8.1	25.6	16.5	41.9	4.8	1.7	20.0
South Atlantic.....	17	7	0.6	3.5	0.5	1.1	2.7	8.2	5.9	14.1	1.6	(D)	(D)
Alabama.....	7	5	0.4	2.3	0.3	0.7	1.9	6.4	3.6	10.0	(D)	(D)	(D)
Texas.....	6	5	0.7	2.8	0.6	1.0	2.2	6.8	4.0	10.7	(D)	0.4	4.4
Mountain.....	13	7	0.4	2.6	0.3	0.6	1.9	6.9	4.1	10.9	(D)	0.3	7.4
Pacific.....	9	6	0.3	2.3	0.3	0.5	1.8	4.1	4.8	8.8	(D)	0.3	4.0

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	1967			1963		
		Production for all purposes (1,000 tons)	Total shipments, including interplant transfers		Production for all purposes (1,000 tons)	Total shipments, including interplant transfers	
			Quantity (1,000 tons)	Value (million dollars)		Quantity (1,000 tons)	Value (million dollars)
3274- --	LIME, TOTAL.....	(X)	(X)	160.6	(X)	(X)	136.9
32740 11	Quicklime.....	(S)	7,548	95.2	(S)	4,920	61.7
32740 51	Hydrated lime.....	2,207	2,123	36.9	2,175	2,154	36.3
32740 71	Dead burned dolomite.....	1,289	1,307	23.4	2,259	2,072	34.7
32740 00	Lime, n.s.k. (For companies with 10 or more employees. See Note.)	(X)	(X)	4.2	(X)	(X)	4.2
32740 02	Lime n.s.k. (For companies with less than 10 employees. See Note.)	(X)	(X)	0.9			

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind. (S) Withheld because reported data did not meet publication standards. (X) Not applicable.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3274.--LIME					
	Materials, parts, containers, and supplies, total.....		(X)	44.1	(X)	37.1
264338	Paper shipping sacks and multiwall bags.....		(X)	4.6	(X)	4.2
970099	All other materials and components, parts, containers, and supplies.....		(X)	25.9	(X)	26.0
142011	Crushed and broken stone, including cement rock, limestone, etc..	1,000 short tons	5,612	11.3	(NA)	(NA)
973000	Materials, parts, containers and supplies, n.s.k. <sup>1</sup> .....		(X)	2.3	(X)	6.9

(NA) Not available. (X) Not applicable.

<sup>1</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

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**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

**Textile mill products • Apparel and leather • Chemicals, rubber, and plastics • Machinery and equipment • Primary metals • Intermediate metal products • Processed foods • Lumber, furniture, and paper products • Stone, clay, and glass products.**

A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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**BUREAU OF THE CENSUS**

**WASHINGTON, D.C. 20233**

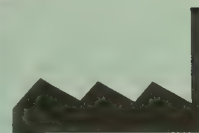
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**U.S. DEPARTMENT OF COMMERCE**

# 1967 CENSUS OF MANUFACTURES



MC67(P)-32D-5

## INDUSTRY SERIES

**preliminary  
report**

### Gypsum products

SIC Code 3275

The Gypsum Products Industry includes establishments primarily engaged in manufacturing plaster, plasterboard and other products composed wholly or chiefly of gypsum.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Gypsum Products Industry amounted to \$388.9 million, a decrease of 9 percent compared with 1963. Value added by manufacture at \$226.8 million in 1967 was 13 percent less than value added in 1963. Average employment in the industry showed a decrease of 13

percent from 1963 to a total of 10.0 thousand employees in 1967.

Of the \$388.9 million total value of shipments and other receipts of establishments classified as gypsum products, \$15.0 million were products primary to other industries; and \$16.9 million were receipts for miscellaneous activities. The industry shipments of primary products represented 96 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 97 percent in 1963.

The total value of gypsum products shipped by all producers in 1967 was \$362.0 million of which \$357.0 million, or 99 percent, were shipped by

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)
INDUSTRY 3275.--GYPSUM PRODUCTS														
1967 Census.....	117	78	10.0	70.7	7.8	17.5	52.1	226.8	160.0	388.9	12.9	39.2	96	99
1966 ASM <sup>1</sup> .....	(NA)	(NA)	11.1	71.2	8.5	19.0	52.5	222.5	170.4	394.4	19.2	45.7	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	11.9	75.8	9.2	20.6	57.0	238.5	189.1	429.1	32.5	42.8	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	12.0	76.0	9.5	21.6	58.1	270.5	183.6	453.9	22.1	40.2	(NA)	(NA)
1963 Census.....	122	72	11.5	70.3	9.2	20.8	54.5	259.7	164.4	425.1	15.2	36.5	97	98
1962 ASM <sup>1</sup> .....	(NA)	(NA)	11.9	68.1	9.5	20.7	51.9	242.2	165.0	406.4	32.2	32.8	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	11.5	63.6	9.2	19.9	48.3	224.7	154.2	375.2	25.2	31.3	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	12.2	64.6	9.8	21.0	49.0	228.5	157.3	382.1	25.2	30.3	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	12.3	65.9	10.1	22.6	52.1	241.0	171.0	410.6	*22.0	28.8	(NA)	(NA)
1958 Census <sup>2</sup> ...	126	63	11.5	58.0	9.4	20.6	45.4	218.0	146.6	364.9	12.1	24.4	95	98

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued November 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**

plants classified in industry 3275, Gypsum Products, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 98 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1,

2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3275.--GYPSUM PRODUCTS												
United States, total.....	117	78	10.0	70.7	7.8	17.5	52.1	226.8	160.0	388.9	12.9	11.5	259.7
Northeast.....	20	15	2.3	16.6	1.8	4.0	12.5	45.4	35.5	81.8	2.0	2.3	46.9
New Jersey.....	5	4	0.4	3.0	0.3	0.7	2.2	8.7	8.6	18.2	0.3	(D)	(D)
East North Central....	16	13	1.6	11.6	1.3	2.9	8.7	43.5	24.6	68.1	1.5	1.7	41.8
Ohio.....	3	3	0.4	3.0	0.3	0.8	2.4	10.3	5.5	15.7	0.5	0.5	10.2
West North Central....	10	7	1.2	7.7	0.9	2.1	5.9	29.1	15.1	44.3	1.6	1.4	33.0
South.....	38	23	3.2	21.4	2.5	5.6	15.5	75.0	54.6	130.6	5.0	3.5	79.5
South Atlantic.....	15	11	1.7	11.2	1.3	3.0	8.4	39.9	30.7	71.3	0.7	(D)	(D)
Texas.....	14	7	0.9	5.9	0.6	1.4	4.2	19.7	14.1	34.0	(D)	1.1	26.4
Mountain.....	11	10	0.8	6.6	0.6	1.4	4.4	13.3	12.1	25.5	2.1	1.2	25.0
Pacific.....	22	10	0.9	6.9	0.7	1.5	5.0	20.5	18.1	38.5	0.6	1.4	33.5

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3275- --	GYPSUM PRODUCTS, TOTAL.....		(X)	362.0	(X)	405.1
32751 11	Calcined gypsum building materials, building plasters and pre-fabricated building materials.....	1,000 tons....	8,702	339.4	10,846	401.7
32752 11	Other calcined gypsum products, industrial plasters.....	...do.....	786	19.4		
32750 00	Gypsum products, n.s.k. (For companies with 10 or more employees. See Note.).....		(X)	1.9	(X)	3.4
32750 02	Gypsum products, n.s.k. (For companies with less than 10 employees. See Note.).....		(X)	1.3		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind. (X) Not applicable.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3275.--GYPSUM PRODUCTS					
	Materials, containers, and supplies, total.....		(X)	127.9	(X)	133.8
264338	Paper shipping sacks and multiwall bags.....	1,000 short tons.	26	4.9	(NA)	4.9
263112	Paperboard liners.....	...do.....	550	45.1		
142011	Crushed and broken stone, including cement rock, limestone, etc..	...do.....	10,234	28.9	(X)	125.2
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	46.6		
976000	Materials, containers, and supplies, n.s.k. <sup>1</sup> .....		(X)	2.4	(X)	3.7

n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3275, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# CURRENT INDUSTRIAL REPORTS

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A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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OFFICIAL BUSINESS



# 1967 CENSUS OF MANUFACTURES



MC67(P)-32D-6

## INDUSTRY SERIES

### Cut stone and stone products

SIC Code 3281

**preliminary  
report**

The Cut Stone and Stone Products Industry includes establishments primarily engaged in cutting, shaping, and finishing marble, granite, slate, and other stone for building and miscellaneous uses. Establishments primarily engaged in buying or selling partly finished monuments and tombstones, but performing no work on the stones other than lettering, finishing, or shaping to custom order, are classified in trade industries. The cutting of grindstones, pulpstones, and whetstones at the quarry is classified as mining industries.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Cut Stone and Stone Products Industry amounted to \$237.2 million, an increase of 9 percent compared with 1963. Value added by manufacture at \$146.4 million in 1967 was 11 percent more than value added in 1963. Average employment in the industry showed a decrease of 11 percent from 1963 to a total of 16.3 thousand employees in 1967.

Of the \$237.2 million total value of shipments and other receipts of establishments classified as cut stone and stone products, \$10.7 million were products primary to other industries; and \$13.3 million were receipts for miscellaneous activities. The industry shipments of primary

TABLE 1. General Statistics: 1958 to 1967

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
	INDUSTRY 3281.--CUT STONE AND STONE PRODUCTS													
1967 Census...	810	195	16.3	89.5	13.9	27.8	69.8	146.4	88.5	237.2	6.1	30.4	95	99
1966 ASM <sup>1</sup> .....	(NA)	(NA)	17.2	90.9	14.2	28.4	68.9	135.0	90.6	224.2	*5.4	31.5	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	17.8	90.9	14.6	29.3	69.7	133.7	85.8	219.7	5.3	29.7	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	18.8	90.8	15.7	31.5	70.6	142.8	87.6	231.4	4.5	31.4	(NA)	(NA)
1963 Census...	893	211	18.3	85.7	15.3	30.9	66.7	131.5	86.6	217.2	6.7	31.2	94	99
1962 ASM <sup>1</sup> *....	(NA)	(NA)	21.3	93.7	17.7	36.5	75.5	150.3	84.3	232.1	4.9	34.8	(NA)	(NA)
1961 ASM <sup>1</sup> *....	(NA)	(NA)	21.9	93.6	18.1	37.0	75.1	149.3	83.8	229.0	5.5	34.0	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	19.5	82.5	16.1	31.8	64.8	134.3	82.2	215.8	*3.4	32.1	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	19.7	81.4	16.4	33.0	61.7	131.6	79.8	211.5	*5.4	29.1	(NA)	(NA)
1958 Census <sup>2</sup> ...	1,001	243	20.3	83.0	17.0	33.1	63.8	129.0	77.1	206.3	8.4	29.9	95	97

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 4 and 7, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

Harold C. Passer, Assistant Secretary for Economic Affairs

**BUREAU OF THE CENSUS** George Hay Brown, Director

products represented 95 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 94 percent in 1963.

The total value of cut stone and stone products shipped by all producers in 1967 was \$214.5 million of which \$213.2 million, or 99 percent, were shipped by plants classified in industry 3281, Cut Stone and Stone Products, while the

remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was also 99 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967										1963		
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
INDUSTRY 3281.--CUT STONE AND STONE PRODUCTS													
United States, total.....	810	195	16.3	89.5	13.9	27.8	69.8	146.4	88.5	237.2	6.1	18.3	131.5
New England:													
New Hampshire.....	5	4	0.2	1.6	0.2	0.5	1.2	2.9	2.4	5.5	0.2	0.2	1.8
East North Central....	136	40	2.9	17.6	2.5	5.1	14.3	28.4	14.0	42.7	1.3	3.8	29.1
Ohio.....	25	5	0.5	2.7	0.4	0.8	2.2	4.9	2.7	7.6	0.4	(D)	(D)
Indiana.....	38	23	1.7	9.5	1.4	2.8	7.8	15.0	5.6	20.9	0.4	2.0	4.0
Illinois.....	32	8	0.4	2.8	0.4	0.8	2.3	4.7	3.6	8.3	0.2	0.4	3.9
Michigan.....	15	-	0.1	0.5	0.1	0.1	0.4	0.8	0.6	1.4	-	(D)	(D)
Wisconsin.....	26	4	0.3	2.1	0.3	0.6	1.7	3.1	1.5	4.5	0.4	0.4	3.9
West North Central....	67	27	2.5	15.1	2.1	4.3	10.3	23.1	14.4	40.2	0.9	2.9	20.3
Kansas.....	11	4	0.3	1.2	0.2	0.4	0.9	1.6	1.4	3.0	(Z)	0.2	1.3
Maryland.....	7	2	0.1	0.8	0.1	0.2	0.6	1.3	0.8	2.1	(D)	0.1	1.2
Virginia.....	9	4	0.3	1.2	0.3	0.6	1.0	2.6	0.6	3.2	(D)	0.2	1.5
South Carolina.....	7	1	0.1	0.3	0.1	0.1	0.2	0.4	0.3	0.7	(Z)	(D)	(D)
South.....	223	58	4.9	22.8	4.3	8.3	18.5	39.1	23.2	62.2	2.0	5.1	30.9
West South Central..	58	12	0.6	2.9	0.5	1.0	2.3	4.8	4.2	9.0	0.2	(D)	(D)
Oklahoma.....	8	4	0.1	0.6	0.1	0.2	0.5	0.8	0.6	1.5	(Z)	(D)	(D)
Texas.....	41	5	0.4	2.0	0.3	0.7	1.5	3.5	3.0	6.4	0.1	0.5	3.6
Pacific.....	62	7	0.6	3.7	0.5	0.9	2.7	6.0	3.5	9.5	(D)	(D)	(D)
California.....	53	7	0.5	3.3	0.4	0.8	2.4	5.4	3.2	8.5	0.2	0.6	4.5

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.  
(Z) Less than \$50 thousand.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (Million dollars)	Quantity	Value (Million dollars)
3281- --	CUT STONE AND STONE PRODUCTS, TOTAL.....	.....	(X)	214.5	(X)	190.9
32811 --	Cut granite and granite products.....	.....	(X)	77.6	(X)	87.8
	Granite products, including gneiss, syenite, and diorite and cut granite:					
	Dressed dimension stone:					
32811 13	Building stone.....	1,000 short tons.....	(S)	19.9	186.4	28.6
32811 35	Monumental stone.....	...do.....	(S)	46.1	(S)	48.3
32811 98	Other granite products, such as paving block and curbing....	...do.....	(S)	8.6	(S)	5.4
32811 00	Cut granite and granite products, n.s.k.....	.....	(X)	3.0	(X)	5.5
32812 --	Cut limestone and limestone products.....	.....	(X)	27.9	(X)	29.1
	Limestone products including dolomite, cement rock, marl, travertine, calcareous tufa, and cut limestone:					
	Dressed dimension stone:					
32812 13	Building stone.....	1,000 short tons.....	(S)	20.5	56.4	25.6
32812 98	Other limestone products, such as flagging.....	...do.....	(S)	4.5	41.0	1.1
32812 00	Cut limestone and limestone products, n.s.k.....	.....	(X)	2.9	(X)	2.4
32813 --	Cut marble and other cut stone products.....	.....	(X)	53.6	(X)	63.6
	Marble, dressed dimension stone:					
	Building stone.....	1,000 short tons.....	(S)	23.2	141.7	23.1
32813 35	Other marble products, such as monumental stone.....	...do.....	(S)	9.0	(S)	18.5
32813 98	Other cut stone and stone products, such as slate (roofing mill stock, flagstone), sandstone, basalt, and other dressed dimension stone products.....	...do.....	(S)	14.3	(S)	17.2
32813 00	Cut marble and other cut stone products, n.s.k.....	.....	(S)	7.1	(X)	4.8
32810 00	Cut stone and stone products, n.s.k. (For companies with 10 or more employees. See Note.).....	.....	(X)	39.4	}	10.4
32810 02	Cut stone and stone products, n.s.k. (For companies with less than 10 employees. See Note.).....	.....	(X)	16.0		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind. (S) Does not meet publication standards. (X) Not applicable.



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	1967			1963		
		Quantity (1,000 short tons)	Delivered cost (million dollars)	Stone consumed from quarries operated at same location as the dressing plant (1,000 short tons)	Quantity (1,000 short tons)	Delivered cost (million dollars)	Stone consumed from quarries operated at same location as the dressing plant (1,000 short tons)
	INDUSTRY 3281.--CUT STONE AND STONE PRODUCTS						
	Materials, containers and supplies, total.....	(X)	66.3	3,545.5	(X)	70.6	3,024.6
	Stone for preparation:						
141101	Rough blocks used to produce dressed stone.....	(S)	22.7	2,512.5	1,107.3	24.9	1,700.8
142101	Broken stone received for crushing, screening, or washing.....	(S)	1.0	1,033.0	(S)	0.2	1,323.8
970099	All other materials and components, parts, containers, and supplies consumed.....	(X)	18.3	-	(X)	31.3	-
976000	Materials, containers, and supplies, n.s.k. <sup>1</sup> .....	(X)	24.3	-	(X)	14.1	-

- Represents zero.      n.s.k. Not specified by kind.      (S) Does not meet publication standards.      (X) Not applicable.

<sup>1</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3281, these small establishments accounted for approximately 5 percent of payrolls and 7 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

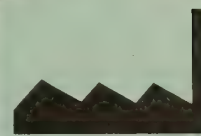
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-32E-1

## INDUSTRY SERIES

### Abrasive products

SIC Code 3291

**preliminary  
report**

The Abrasive Products Industry includes establishments primarily engaged in manufacturing abrasive grinding wheels of natural or synthetic materials, and other abrasive products. The cutting of grindstones, pulpstones, and whetstones at the quarry is classified in mining industries.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Abrasive Products Industry amounted to \$902.1 million, an increase of 28 percent

compared with 1963. Value added by manufacture at \$538.8 million in 1967 was 29 percent more than value added in 1963. Average employment in the industry showed an increase of 7 percent from 1963 to a total of 30.1 thousand employees in 1967.

Of the \$902.1 million total value of shipments and other receipts of establishments classified as abrasive products, \$186.7 million were products primary to other industries; and \$44.4 million were receipts for miscellaneous activities. The industry shipments of primary products represented 78 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 70 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3291. --ABRASIVE PRODUCTS														
1967 Census....	362	166	30.1	218.3	21.2	40.0	134.1	538.8	362.2	902.1	47.8	156.1	78	92
1966 ASM <sup>1</sup> .....	(NA)	(NA)	34.9	246.4	23.3	47.7	152.5	619.9	413.0	1,015.6	39.3	161.8	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	31.7	218.4	20.9	43.3	134.2	535.3	372.3	899.6	21.9	138.5	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	29.3	201.1	19.2	38.8	113.6	473.5	309.6	775.1	16.3	123.4	(NA)	(NA)
1963 Census.....	378	149	28.2	187.0	18.6	36.7	107.6	416.4	287.5	704.2	15.5	115.0	70	95
1962 ASM <sup>1</sup> .....	(NA)	(NA)	28.5	187.9	18.1	35.2	100.9	398.3	266.6	659.5	12.1	117.2	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	27.1	169.2	16.9	33.2	89.0	357.4	238.2	594.9	14.1	109.7	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	28.0	172.7	18.3	34.7	91.7	354.4	253.4	605.9	16.4	108.6	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	27.4	165.6	18.4	35.9	94.1	351.6	253.9	599.5	20.2	107.6	(NA)	(NA)
1958 Census <sup>2</sup> ...	354	130	24.0	127.9	16.0	30.9	75.5	277.7	211.2	490.8	21.1	95.0	83	96

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**



The total value of abrasive products shipped by all producers in 1967 was \$733.0 million of which \$671.0 million, or 92 percent, were shipped by plants classified in industry 3291, Abrasive Products, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 95 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3291. --ABRASIVE PRODUCTS												
United States, total.....	362	166	30.1	218.3	21.2	40.0	134.1	538.8	362.2	902.1	47.8	28.2	416.4
New England.....	50	30	7.4	56.5	4.6	8.8	31.6	108.8	75.8	184.9	7.3	6.0	83.8
Massachusetts.....	29	20	6.5	50.8	4.0	7.6	28.1	95.8	63.2	159.4	5.7	5.3	74.8
Middle Atlantic.....	101	51	11.2	83.1	7.6	14.3	49.6	162.7	118.6	280.1	22.2	10.4	132.9
New York.....	48	20	8.2	62.0	5.4	10.0	36.1	122.3	92.0	215.6	(D)	8.0	107.4
New Jersey.....	23	10	1.0	7.0	0.7	1.5	4.5	11.1	10.2	19.5	(D)	0.7	7.0
Pennsylvania.....	30	21	2.0	14.1	1.4	2.8	9.0	29.3	16.3	44.9	1.0	1.7	18.6
North Central.....	157	69	10.3	70.7	8.0	14.8	47.7	249.2	153.5	404.8	17.4	10.6	185.2
Ohio.....	39	18	2.4	15.7	1.9	3.6	10.7	33.3	21.0	53.6	4.2	(D)	(D)
Indiana.....	9	4	0.3	1.1	0.2	0.4	0.8	2.8	1.7	4.5	0.6	0.1	1.3
Michigan.....	46	21	2.0	14.7	1.4	2.8	8.6	31.0	29.0	59.0	2.4	1.7	21.4
South.....	22	8	0.5	2.8	0.4	0.9	1.9	5.2	6.5	11.7	0.4	0.4	3.6
East South Central..	7	3	0.3	1.4	0.2	0.5	1.0	2.5	2.8	5.4	0.2	(D)	(D)
West.....	32	8	0.8	5.1	0.5	1.1	3.3	12.9	7.8	20.5	0.4	0.7	10.8
California.....	27	6	0.5	3.5	0.3	0.7	2.0	8.8	5.5	14.0	0.3	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	1967			1963		
			Production for all purposes (quantity)	Total shipments, including interplant transfers		Production for all purposes (quantity)	Total shipments, including interplant transfers	
				Quantity	Value (million dollars)		Quantity	Value (million dollars)
3291- --	ABRASIVE PRODUCTS, TOTAL.....		(X)	(X)	733.0	(X)	(X)	572.2
32911 --	Nonmetallic artificial (synthetic) sized grains, powders, and flour abrasives (including graded products only), total.....		(X)	(X)	101.5	(X)	(X)	174.3
32911 17	Silicon carbide.....	1,000 short tons.....	(X)	(X)	(1)	99.1	92.2	23.4
32911 19	Aluminum oxide.....	do.....	(S)	155.0	44.4	148.1	132.5	37.6
32911 29	Other artificial sized grains, powders and flour, including combinations of silicon carbide and aluminum oxide, boron carbide, synthetic diamond, etc.....		(X)	(X)	156.1	(X)	(X)	112.9
32911 00	Nonmetallic artificial (synthetic) sized grains, powders, and flour abrasives (including graded products only) n.s.k.....		(X)	(X)	1.0	(X)	(X)	(S)
32912 --	Nonmetallic bonded abrasive products, including diamond abrasives, total.....		(X)	(X)	308.7	(X)	(X)	247.3
	Artificial and natural bonded abrasives, including grinding wheels, sticks, stones, hones, balls, tumbling media, and bricks (excluding refractory bricks, floor and stair brick, and similar by-products):							
	Silicon carbide:							
32912 32	Vitrified bond.....		(X)	(X)	36.1	(X)	(X)	24.3
	Resinoid and shellac bond:							
32912 33	Reinforced.....		(X)	(X)	17.4	(X)	(X)	19.8
32912 35	Nonreinforced.....		(X)	(X)	18.5			
32912 36	Rubber bond.....		(X)	(X)	2.7	(X)	(X)	3.1
	Aluminum oxide:							
32912 41	Vitrified bond.....		(X)	(X)	75.2	(X)	(X)	60.8
32912 43	Rubber bond.....		(X)	(X)	13.2	(X)	(X)	9.7
	Resinoid and shellac bond:							
32912 46	Reinforced.....		(X)	(X)	23.3	(X)	(X)	54.0
32912 47	Nonreinforced.....		(X)	(X)	35.1			
	Diamond wheels:							
32912 62	Metal bond.....	1,000 carats.	(X)	3,165.3	20.9	(X)	7,423.1	41.2
32912 64	Other bond.....	do.....	(X)	5,714.7	25.6			
32912 69	Other bonded abrasives (including combinations of silicon carbide and aluminum oxide and natural bonded abrasives).....		(X)	(X)	17.5	(X)	(X)	8.4
32912 48	Nonmetallic natural sized grains, powders, and flour.....		(X)	(X)	27	(X)	(X)	44
32912 72	Crude lump forms.....		(X)	(X)	10.3	(X)	(X)	16.1
32912 79	Other artificial and natural nonmetallic abrasives and abrasive products (except coated abrasives), including grinding, lapping, buffing compounds, etc.....							
32912 00	Nonmetallic bonded abrasive products, including diamond abrasives, n.s.k.....							
32913 --	Nonmetallic coated abrasive products and buffing wheels, polishing wheels, and laps, total.....		(X)	(X)	225.3	(X)	(X)	176.3
	Coated or impregnated with any natural or artificial abrasive material:							
	Cloth--glue bond:							
32913 12	Belts.....	1,000 reams..	(X)	271.1	32.9	(X)	435.0	35.0
32913 14	Other shapes.....	do.....	(X)	260.0	17.9			
	Cloth--resin and waterproof bond:							
32913 16	Belts.....	do.....	(X)	358.8	44.6	(X)	380.6	51.0
32913 18	Other shapes.....	do.....	(X)	177.2	18.2			

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	1967			1963		
			Production for all purposes (quantity)	Total shipments, including interplant transfers		Production for all purposes (quantity)	Total shipments, including interplant transfers	
				Quantity	Value (million dollars)		Quantity	Value (million dollars)
3291- --	ABRASIVE PRODUCTS--Continued							
32913 --	Nonmetallic coated abrasive products and buffing wheels, polishing wheels, and laps--Continued							
	Coated or impregnated with any natural or artificial abrasive material--Continued							
	Paper--glue bond:							
32913 22	Belts.....	1,000 reams..	(X)	437.3	6.4	(X)	1,232.8	29.3
32913 24	Other shapes.....	do.....	(X)	758.6	19.4			
	Paper--resin and waterproof bond:							
32913 26	Belts.....	do.....	(X)	43.5	1.9	(X)	540.5	19.3
32913 28	Other shapes.....	do.....	(X)	363.4	12.3			
	Other, including paper-cloth combinations, vulcanized fiber-cloth combinations, vulcanized fibers, etc.:							
32913 35	Glue bond.....	do.....	(X)	36.6	5.3	(X)	19.3	2.2
32013 37	Resin and waterproof bond.....	do.....	(X)	129.4	34.4	(X)	129.1	16.0
32913 71	Buffing and polishing wheels and laps made of cloth, leather, felt, and other materials (containing no abrasive grains, powders, or flour).....		(X)	(X)	23.6	(X)	(X)	21.4
32913 00	Nonmetallic coated abrasive products and buffing wheels, polishing wheels and laps, n.s.k.....		(X)	(X)	8.4	(X)	(X)	2.0
32914 --	Metal abrasives, including scouring pads, total.....		(X)	(X)	75.1	(X)	(X)	63.2
32914 11	Steel and iron grit, shot, and sand.....	1,000 short tons.....	(X)	244.4	31.2	(X)	126.6	17.2
32914 31	Steel wool.....	do.....	(X)	(S)	7.2	(X)	8.4	7.0
32914 53	Metal pads with soap or other cleanser impregnated or in package.....	1,000 gross..	(X)	6,651.3	31.3	(X)	(NA)	38.7
32914 98	Other metal abrasives and scouring pads.....		(X)	(X)	4.2	(X)	(X)	
32914 00	Metal abrasives, including scouring pads, n.s.k.....		(X)	(X)	1.2	(X)	(X)	(S)
32910 00	Abrasive products, n.s.k. (For companies with 10 or more employees. See Note.).....		(X)	(X)	16.5	(X)	(X)	11.1
32910 02	Abrasive products, n.s.k. (For companies with less than 10 employees. See Note.).....		(X)	(X)	5.9			

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. (S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review. (X) Not applicable.

<sup>1</sup>Code 3291117 included with code 3291129.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(Not applicable to this report)



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3291, these small establishments accounted for approximately 0.5 percent of payrolls and 0.6 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products**--In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture**--This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment**--For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories**--Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

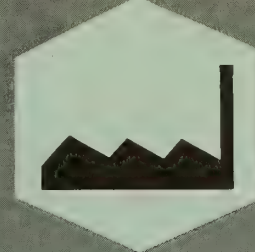
**U.S. DEPARTMENT OF COMMERCE**  
**Bureau of the Census**  
Washington, D.C. 20233

POSTAGE AND FEES PAID  
U.S. DEPARTMENT OF COMMERCE

OFFICIAL BUSINESS



# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

**preliminary  
report**

### Asbestos products

SIC Code 3292

The Asbestos Products Industry includes establishments primarily engaged in manufacturing asbestos textiles, asbestos building materials, except asbestos paper (industry 2661) and other commodities composed wholly or chiefly of asbestos, except steam and other packing, pipe and boiler covering and gaskets (industry 3293).

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Asbestos Products Industry amounted to \$576.5 million, an increase of 13 percent

compared with 1963. Value added by manufacture at \$308.9 million in 1967 was 14 percent more than value added in 1963. Average employment in the industry showed an increase of 10 percent from 1963 to a total of 21.4 thousand employees in 1967.

Of the \$576.5 million total value of shipments and other receipts of establishments classified as asbestos products, \$41.0 million were products primary to other industries; and \$31.6 million were receipts for miscellaneous activities. The industry shipments of primary products represented 92 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 95 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)
INDUSTRY 3292.--ASBESTOS PRODUCTS														
1967 Census....	139	100	21.4	144.3	16.9	35.1	107.8	308.9	264.6	576.5	18.9	111.0	92	89
1966 ASM <sup>1</sup> .....	(NA)	(NA)	22.7	149.6	17.8	37.6	114.0	324.2	281.9	591.1	23.4	113.8	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	21.0	132.1	16.8	34.7	100.3	300.6	268.3	567.7	27.9	95.3	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	20.4	128.1	16.4	34.9	98.4	300.1	251.7	545.8	20.9	89.8	(NA)	(NA)
1963 Census....	124	84	19.5	118.0	15.7	32.9	89.8	269.1	240.7	509.2	12.4	82.8	95	91
1962 ASM <sup>1</sup> .....	(NA)	(NA)	21.8	125.9	17.7	36.6	96.1	268.2	251.4	512.9	13.9	86.9	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	21.7	118.6	17.5	35.9	90.1	269.3	238.8	502.9	9.1	82.6	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	22.4	119.2	18.3	37.4	92.1	279.1	243.7	515.0	18.5	85.4	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	22.8	119.4	18.6	39.1	92.8	179.6	250.5	522.5	11.1	79.0	(NA)	(NA)
1958 Census <sup>2</sup> ...	109	80	21.3	106.4	17.0	35.0	80.4	235.5	216.6	453.5	12.8	70.9	83	96

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued December 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**

The total value of asbestos products shipped by all producers in 1967 was \$562.5 million of which \$503.9 million, or 89 percent, were shipped by plants classified in industry 3292, Asbestos Products, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 91 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employ- ees or more (number)	Number	Payroll	Number	Man-hours	Wages						
	(number)		(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
	INDUSTRY 3292.--ASBESTOS PRODUCTS												
United States, total.....	139	100	21.4	144.3	16.9	35.1	107.8	308.9	264.6	576.5	18.9	19.5	269.1
New England.....	14	11	2.8	20.0	2.1	4.4	15.3	34.6	25.9	60.8	0.9	2.2	24.5
Middle Atlantic.....	32	22	6.7	46.0	5.2	10.7	34.0	91.6	75.9	169.5	4.4	6.5	83.2
New York.....	8	5	2.0	12.7	1.6	3.2	9.8	27.2	26.0	52.5	1.8	1.6	16.2
New Jersey.....	14	10	2.4	17.2	2.0	4.1	13.5	35.1	31.9	68.5	1.8	2.8	41.5
Pennsylvania.....	10	7	2.4	16.2	1.7	3.4	10.7	29.4	18.0	48.5	0.8	2.1	25.6
North Central.....	39	26	4.6	32.1	3.5	7.5	23.7	71.1	67.7	137.7	2.7	4.4	66.0
Ohio.....	8	6	0.7	4.8	0.5	1.1	3.2	8.8	11.2	20.4	0.2	(D)	(D)
Indiana.....	5	5	0.8	5.0	0.6	1.2	3.3	7.9	5.6	14.0	0.4	1.0	8.7
Illinois.....	13	11	2.6	18.8	2.1	4.4	14.7	45.3	43.7	87.7	(D)	2.5	43.9
South.....	34	25	5.1	30.4	4.3	8.9	23.3	73.8	56.2	130.2	6.9	4.5	54.0
West South Central..	12	10	2.1	13.3	1.7	3.6	10.0	33.1	29.5	62.7	1.9	(D)	(D)
West.....	20	16	2.1	15.9	1.6	3.5	11.4	37.8	38.9	78.3	4.0	1.9	41.3
California.....	18	16	2.1	15.9	1.6	3.5	11.4	37.7	38.9	78.2	(D)	1.9	41.3

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	1967			1963		
			Production for all purposes (quantity)	Total shipments, including interplant transfers		Production for all purposes (quantity)	Total shipments, including interplant transfers	
				Quantity	Value (million dollars)		Quantity	Value (million dollars)
3292- --	ASBESTOS PRODUCTS, TOTAL.....		(X)	(X)	562.5	(X)	(X)	506.1
32922 --	Asbestos friction materials.....		(X)	(X)	144.4	(X)	(X)	117.7
	Brake linings:							
32922 11	Woven (containing asbestos yarn, tape, or cloth)	1,000 lin.ft.	(NA)	(S)	13.5	(X)	10.5	6.4
32922 15	Molded, including all nonwoven types.....	1,000 cu. ft.	(NA)	(S)	95.6	(X)	963.1	81.1
	Clutch facing:							
32922 51	Woven (containing asbestos yarn, tape, or cloth)	Million pieces.....	(NA)	23.5	17.2	(X)	19.0	12.1
32922 55	Molded, including all nonwoven types.....	...do.....	(NA)	(S)	16.1	(X)	57.1	17.5
32922 00	Asbestos friction materials, n.s.k.....		(X)	(X)	2.0	(X)	(X)	0.5
32924 --	Asbestos-cement shingles and clapboard, total.....	Million squares.....	(NA)	1.9	20.9	(X)	3.1	34.7
32924 11	Sliding shingles and clapboard, including accessories.....	...do.....	(NA)	1.9	20.9	(X)	2.9	31.9
32924 51	Roofing shingles.....	...do.....				(X)	0.2	2.8
32925 11	Asphalt floor tile.....	Million sq. yards.....	28.0	29.0	25.0	74.3	74.3	59.2
32926 11	Vinyl asbestos floor tile.....	...do.....	142.7	143.5	153.5	106.1	106.7	131.1
32927 --	Asbestos textiles and other asbestos and asbestos-cement products, total.....		(X)	(X)	214.2	(X)	(X)	162.2
	Asbestos textiles:							
32927 11	Yarn, cord, and thread.....	Million lbs..	(S)	9.4	7.1	19.7	10.1	7.2
32927 21	Cloth.....	...do.....	11.5	10.2	12.3	9.4	8.1	9.1
32927 31	Other asbestos textiles, including roving, lap, wick, rope, tape, carded fibers, etc.....	...do.....	(S)	(S)	11.5	10.3	9.6	9.7
	Asbestos-cement products:							
32927 41	Flat sheets and wallboard, all thickness converted to 1/4" basis.....	1,000 sq.ft.	(NA)	(S)	15.2	(X)	(X)	113.5
32927 51	Corrugated sheets.....	...do.....	(NA)	(S)	3.5			
32927 71	Pipe, conduits, and ducts, including pressure pipe.....	1,000 short tons.....	(NA)	840.1	118.6			
	Asbestos felts:							
32927 81	Roofing asphalt or tar saturated.....	...do.....	(NA)	(S)	11.2	(X)	52.3	8.8
32927 85	Other.....	...do.....	(NA)	(S)	17.2	(X)	(S)	6.6
32927 98	Other asbestos and asbestos-cement products, including millboard and prefabricated housing components.....		(X)	(X)	14.1	(X)	(X)	6.2
32927 00	Asbestos textiles and other asbestos and asbestos-cement products, n.s.k.....		(X)	(X)	3.5	(X)	(X)	1.1
32920 00	Asbestos products, n.s.k. (For companies with 10 or more employees. See Note.).....		(X)	(X)	4.0	(X)	(X)	1.1
32920 02	Asbestos products, n.s.k. (For companies with less than 10 employees. See Note.).....		(X)	(X)	0.5			

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. (S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review. (X) Not applicable.

TABLE 4. **Materials Consumed, by Kind: 1967 and 1963**

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3292.--ASBESTOS PRODUCTS					
	Materials and components, parts, containers, and supplies, total.....		(X)	228.7	(X)	212.1
149901	Asbestos, crude (including fiber).....	1,000 short tons.	442.2	55.7	453.2	48.3
324101	Portland cement.....	1,000 bbls. (376 lb. bbls.).....	2,966.3	10.9	2,370.0	8.8
209010	Vegetable oils, including crude and processed.....	Million lbs.....	36.4	6.1	34.2	6.0
282137	Vinyl and vinyl copolymer resins, all forms.....	...do.....	195.9	27.7	201.6	31.0
281012	Pigment, organic, and inorganic.....	...do.....	58.2	12.3	59.4	14.9
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	103.9	(X)	98.7
973000	Materials, components, parts, containers, and supplies, n.s.k. <sup>1</sup> ..		(X)	12.1	(X)	4.4

n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3292, these small establishments accounted for approximately .01 percent of payrolls and .01 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

**U.S. DEPARTMENT OF COMMERCE**  
**Bureau of the Census**  
Washington, D.C. 20233

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OFFICIAL BUSINESS

POSTAGE AND FEES PAID  
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# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

**preliminary  
report**

### Gaskets and insulations

SIC Code 3293

The Gaskets, Packing, and Asbestos Insulations Industry includes establishments primarily engaged in manufacturing packing for steam, water, and other pipe joints, and for engines, air compressors, etc.; and insulating materials for covering boilers and pipes; and gaskets. Establishments primarily engaged in manufacturing leather packing are classified in industry 3121, rubber packing in industry 3059, and metal packing in industry 3599.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classi-

fied in the Gaskets and Insulations Industry amounted to \$350.8 million, an increase of 26 percent compared with 1963. Value added by manufacture at \$205.2 million in 1967 was 28 percent more than value added in 1963. Average employment in the industry showed an increase of 10 percent from 1963 to a total of 18.5 thousand employees in 1967.

Of the \$350.8 million total value of shipments and other receipts of establishments classified as gaskets and insulations, \$56.9 million were products primary to other industries; and \$24.0 million were receipts for miscellaneous activities. The industry shipments of primary products represented 83 percent of the total manufactured

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)
INDUSTRY 3293.—GASKETS AND INSULATIONS														
1967 Census....	300	122	18.5	116.2	14.0	27.7	76.4	205.2	148.6	350.8	13.5	54.0	83	80
1966 ASM <sup>1</sup> .....	(NA)	(NA)	17.6	108.7	13.4	27.9	71.4	203.3	155.7	353.7	10.3	54.2	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	17.5	102.9	13.3	27.8	69.3	174.1	137.2	310.4	8.0	44.0	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	16.8	100.9	12.8	26.8	63.5	162.8	125.8	297.6	8.7	43.8	(NA)	(NA)
1963 Census....	295	111	16.8	94.4	12.7	25.9	62.3	160.7	117.0	279.2	8.9	40.5	81	78
1962 ASM <sup>1</sup> .....	(NA)	(NA)	14.7	79.9	11.0	23.1	49.5	132.2	108.9	238.5	8.2	32.9	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	13.7	73.1	9.9	21.1	43.6	121.2	101.9	222.7	*5.6	30.4	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	13.8	70.7	10.0	21.0	42.5	114.3	95.5	210.4	*8.4	31.6	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	14.4	73.2	10.7	21.8	48.4	122.6	98.9	219.5	*9.4	33.4	(NA)	(NA)
1958 Census <sup>2</sup> ...	282	99	13.5	65.1	9.9	19.5	41.5	105.2	83.0	188.7	5.7	30.2	87	69

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

Harold C. Passer, Assistant Secretary for Economic Affairs

BUREAU OF THE CENSUS George Hay Brown, Director

product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 81 percent in 1963.

The total value of gaskets and insulations shipped by all producers in 1967 was \$335.3 million of which \$269.9 million, or 80 percent, were shipped by plants classified in industry 3293, Gaskets and Insulations, while the remainder was shipped by plants classified in other industries.

This percent, called the coverage ratio, was 78 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
	INDUSTRY 3293.--GASKETS AND INSULATIONS												
United States, total.....	300	122	18.5	116.2	14.0	27.7	76.4	205.2	148.6	350.8	13.5	16.8	160.7
New England.....	16	8	1.2	7.9	0.8	1.6	4.0	13.2	8.8	21.6	0.4	0.9	9.2
Massachusetts.....	11	4	0.6	4.6	0.4	0.8	1.9	8.5	5.3	13.8	0.3	0.5	5.0
Connecticut.....	5	4	0.6	3.3	0.4	0.8	2.1	4.7	3.4	7.9	0.1	0.5	4.2
Middle Atlantic.....	78	27	4.1	28.5	3.2	6.6	20.4	54.3	36.0	89.8	6.1	4.3	45.5
Pennsylvania.....	22	9	1.3	8.4	1.0	2.1	5.9	16.0	11.4	27.6	(D)	1.5	14.1
North Central.....	119	51	9.3	56.6	6.9	13.3	37.0	97.1	73.8	169.2	4.9	8.9	83.0
Illinois.....	42	18	5.5	34.3	3.9	7.3	21.9	57.9	38.0	94.1	2.9	5.4	49.7
Michigan.....	19	10	1.2	7.8	0.9	1.9	5.2	14.4	13.5	28.2	(D)	1.0	10.2
South.....	46	22	2.4	12.4	2.0	3.9	8.6	23.8	18.8	42.3	0.7	1.5	11.6
West South Central..	27	14	1.4	7.8	1.1	2.3	5.4	15.3	10.3	25.5	0.3	(D)	(D)
West.....	41	14	1.6	10.8	1.1	2.4	6.5	16.8	11.2	27.9	1.3	1.1	11.5
California.....	30	13	1.5	10.5	1.1	2.3	6.2	16.2	10.6	26.7	(D)	1.1	11.3

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3293- --	GASKETS AND INSULATIONS, TOTAL.....		(X)	335.3	(X)	262.2
32932 --	Gaskets, all types, total.....		(X)	246.1	(X)	199.7
	Gaskets (for sealing nonmoving parts):					
32932 11	Asbestos, asbestos-metallic, and asbestos-rubber.....		(X)	62.3	(X)	37.8
32932 21	Cork.....		(X)	14.0	(X)	16.4
32932 31	Rubber (except asbestos-rubber).....		(X)	89.3	(X)	68.6
32932 43	Paper and felt base.....		(X)	19.4	(X)	14.4
32932 51	Metal.....		(X)	21.8	(X)	27.9
32932 98	Other gaskets, including leather.....		(X)	30.7	(X)	25.4
32932 00	Gaskets, all types, n.s.k.....		(X)	8.6	(X)	9.3
32933 --	Packing (except leather, rubber, and metal) and asbestos insulations, total.....		(X)	65.8	(X)	51.2
32933 11	Asbestos compressed sheet.....	Million lbs..	(S)	5.1	11.3	3.1
	Packing (for sealing moving parts):					
32933 13	Asbestos, asbestos-metallic and asbestos-rubber.....	Million lbs..	8.3	18.1	10.9	17.4
32933 19	Other packing.....		(X)	6.9	(X)	5.6
	Insulation materials containing asbestos:					
	Pipe insulation:					
32933 31	Cellular and laminated.....	Million lin. ft.....	(S)	2.1	(S)	2.7
32933 33	85 percent magnesia.....	..do.....	(S)	( <sup>1</sup> )	3.4	1.4
32933 37	Diatomaceous silica, calcium silicate, expanded silica, and asbestos fiber.....	..do.....	15.7	9.9	10.6	6.7
32933 39	Other pipe insulation.....		(S)	<sup>1</sup> 5.3	(S)	2.2
	Block insulation (including sheet and lagging):					
32933 45	Diatomaceous silica, calcium silicate, expanded silica and asbestos fiber.....	Million bd. ft.....	23.7	4.6	11.9	3.0
32933 49	Other block insulation, including cellular and laminated....	..do.....			9.5	2.3
32933 43	85 percent magnesia.....	..do.....				
32933 51	All other asbestos insulation.....		(X)	9.6	(X)	3.9
32933 00	Packing and asbestos insulation, n.s.k.....		(X)	4.2	(X)	3.0
32930 00	Gaskets and insulation, n.s.k. (For companies with 10 or more employees. See Note.).....		(X)	18.8	(X)	11.3
32930 02	Gaskets and insulation, n.s.k. (For companies with less than 10 employees. See Note.).....		(X)	4.6		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind. (X) Not applicable. (S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review.

<sup>1</sup>Code 3293333 included in figure for code 3293339.



TABLE 4. **Materials Consumed, by Kind: 1967 and 1963**

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3293.--GASKETS AND INSULATIONS					
	Materials and components, parts, containers, and supplies, total.....			127.7	(X)	97.3
149901	Asbestos, crude (including fiber).....	1,000 short tons	(S)	10.9	31.4	5.0
970099	All other material and components, parts, containers, and supplies consumed.....		(X)	92.8	(X)	78.5
973000	Materials, and components, parts, containers, and supplies, n.s.k.....		(X)	24.0	(X)	13.9

n.s.k. Not specified by kind. (S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review. (X) Not applicable.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3293, these small establishments accounted for approximately 0.6 percent of payrolls and 1.0 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-32E-4

## INDUSTRY SERIES

### Minerals, ground or treated

**preliminary  
report**

SIC Code 3295

The Minerals and Earths, Ground or Otherwise Treated, Industry includes establishments engaged primarily in crushing, grinding, pulverizing and otherwise preparing certain earths, rocks, minerals or slag for sale for industrial uses or for further manufacture. The beneficiating of ores and the cleaning and grading of coal performed at the mine or by primary preparation plans are classified in mining industries.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Minerals, Ground or Treated, Industry

amounted to \$279.5 million, an increase of 37 percent compared with 1963. Value added by manufacture at \$147.9 million in 1967 was 45 percent more than value added in 1963. Average employment in the industry showed an increase of 23 percent from 1963 to a total of 9.0 thousand employees in 1967.

Of the \$279.5 million total value of shipments and other receipts of establishments classified as minerals, ground or treated, \$10.2 million were products primary to other industries; and \$27.6 million were receipts for miscellaneous activities. The industry shipments of primary products represented 96 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 94 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3295, --MINERALS, GROUND OR TREATED														
1967 Census....	509	134	9.0	60.8	7.1	14.6	42.5	147.9	132.6	279.5	29.6	28.9	96	88
1966 ASM <sup>1</sup> .....	(NA)	(NA)	8.9	58.3	6.8	14.5	40.7	164.7	127.9	292.1	*21.6	26.8	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	8.6	52.6	6.6	13.9	37.1	142.4	120.1	263.2	19.4	24.7	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	7.3	43.9	5.5	11.3	30.5	107.0	104.9	210.8	*10.2	24.4	(NA)	(NA)
1963 Census....	415	97	7.3	41.6	5.7	11.7	29.6	102.1	101.9	204.4	11.9	23.5	94	86
1962 ASM <sup>1</sup> .....	(NA)	(NA)	*8.6	*49.0	*6.5	*14.0	*35.2	*128.3	*102.6	*226.3	*21.1	*28.8	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	*8.7	*47.7	*6.6	*14.2	*34.3	*126.7	*104.8	*232.7	*35.5	*25.2	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	*9.3	*50.3	*7.2	*15.2	*36.4	*137.3	*102.0	*236.5	*14.6	*27.4	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	*8.9	*47.8	*7.0	*14.5	*34.7	*136.7	*107.8	*244.8	*26.6	*24.6	(NA)	(NA)
1958 Census <sup>2</sup> ....	424	111	8.3	42.3	6.5	13.5	30.5	115.5	101.5	219.1	9.5	23.1	96	85

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 3 and 4, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued January 1970

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

Harold C. Passer, Assistant Secretary for Economic Affairs

**BUREAU OF THE CENSUS** George Hay Brown, Director



The total value of minerals, ground or treated, shipped by all producers in 1967 was \$274.6 million of which \$241.7 million, or 88 percent, were shipped by plants classified in industry 3295, Minerals, Ground or Treated, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 86 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3295, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MQ-32C, Refractories

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
INDUSTRY 3295.--MINERALS, GROUND OR TREATED													
United States, total.....	509	134	9.0	60.2	7.1	14.6	42.5	147.9	132.6	279.5	29.6	7.3	102.1
New England.....	11	2	0.2	1.0	0.1	0.2	0.6	2.8	1.6	4.1	0.2	0.1	1.2
Massachusetts.....	8	2	0.1	0.9	0.1	0.2	0.5	2.6	1.4	3.8	0.2	(D)	(D)
Middle Atlantic.....	89	28	1.8	12.3	1.4	2.8	8.5	30.7	22.8	52.7	3.5	1.7	21.9
New York.....	14	6	0.3	2.1	0.2	0.6	1.7	6.1	2.6	8.6	0.5	0.3	3.1
New Jersey.....	29	7	0.6	4.1	0.4	0.8	2.3	9.5	10.6	19.5	0.9	0.5	7.1
Pennsylvania.....	46	15	0.9	6.1	0.7	1.5	4.4	15.1	9.6	24.6	2.1	1.0	11.7
East North Central....	96	33	2.0	15.7	1.6	3.3	10.8	38.3	36.9	75.0	7.8	1.6	22.7
Ohio.....	32	12	0.7	5.7	0.6	1.3	4.3	14.2	5.5	19.7	0.9	0.5	6.8
Illinois.....	26	10	0.6	4.3	0.5	0.9	2.6	7.2	13.9	21.1	(D)	0.6	7.1
Michigan.....	19	6	0.3	2.6	0.3	0.6	1.8	9.0	12.4	21.3	(D)	0.2	4.5
West North Central....	37	5	0.3	1.9	0.2	0.5	1.4	5.1	5.6	10.7	1.4	0.1	2.6
Missouri.....	16	2	0.1	0.8	0.1	0.2	0.5	1.9	1.6	3.5	0.1	(D)	(D)
South Atlantic.....	58	17	1.3	8.2	1.0	2.1	5.8	17.4	15.5	32.8	3.4	1.1	13.1
North Carolina.....	15	2	0.2	1.1	0.2	0.3	0.7	1.9	2.3	4.1	0.3	0.2	2.1
South Carolina.....	6	2	0.1	0.5	0.1	0.2	0.4	0.9	0.8	1.7	(D)	(D)	(D)
Florida.....	11	2	0.1	0.6	0.1	0.2	0.4	1.2	2.0	3.2	0.1	(D)	(D)
East South Central....	34	13	0.7	3.6	0.5	1.1	2.7	11.4	7.9	19.2	1.2	0.6	8.7
Alabama.....	19	8	0.4	1.8	0.3	0.6	1.4	6.4	3.9	10.3	1.0	0.3	4.0
West South Central....	61	14	1.1	6.7	0.9	2.1	4.9	15.3	21.9	37.6	4.4	0.8	11.1
Texas.....	47	11	0.9	5.4	0.7	1.7	4.0	11.3	13.8	25.4	4.1	0.5	5.8
Mountain.....	36	8	0.5	2.9	0.4	0.7	2.2	8.6	5.8	14.3	(D)	0.3	4.7
Pacific.....	87	14	1.2	7.9	0.9	1.7	5.7	18.3	14.7	33.3	(D)	1.0	16.0
Washington.....	16	1	0.1	0.6	0.1	0.2	0.5	1.1	1.5	2.9	0.1	(D)	(D)
California.....	53	11	0.9	6.2	0.7	1.3	4.4	15.2	11.9	27.0	5.8	0.9	14.9

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

**TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963**

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3295- --	MINERALS, GROUND OR TREATED, TOTAL.....	.....	(X)	274.6	(X)	203.1
32950 11	Lightweight aggregate (such as diatomaceous earth, expanded clay, expanded slag, cinders, perlite, haydite, pumice, but excluding vermiculite).....	1,000 short tons.....	(S)	27.5	6,909.5	22.0
	Exfoliated vermiculite:					
32950 13	Aggregate.....	Million cu.ft.	(D)	(D)	19.3	5.2
32950 15	Other (such as loose fill insulation, acoustical).....	..do.....	(D)	(D)	26.4	8.5
32950 20	Dead-burned magnesia or magnesite.....	.....	(X)	28.2	(X)	27.9
32950 31	Crushed slag.....	1,000 short tons.....	21,334.4	38.0	18,453.0	32.3
32950 61	Crushed and uncalcined gypsum (including gypsite and anhydrite)...	..do.....	1,274.8	9.6	915.1	6.5
32950 81	Natural graphite, ground, refined, or blended.....	..do.....	35.4	5.9	32.6	6.2
32950 84	Ground crude fire clay, high alumina clay, silica fire clay.....	..do.....	102.8	2.7	(X)	4.4
32950 87	Ground barite.....	..do.....	(D)	(D)	547.2	14.8
32950 98	Other minerals and earths, ground or otherwise treated, including feldspar, talc, soapstone, pulverized limestone, roofing granules, other beneficiated clays and shales, mica, pyrophyllite, and silica.....	..do.....	(X)	85.6	(S)	59.7
32950 00	Minerals, ground or treated, n.s.k. (For companies with 10 or more employees. See Note.).....	.....	(X)	44.2	}	15.5
32950 02	Minerals, ground or treated, n.s.k. (For companies with less than 10 employees. See Note.).....	.....	(X)	5.9		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or from related figures. n.s.k. Not specified by kind. (S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review. (X) Not applicable.

**TABLE 4. Materials Consumed, by Kind: 1967 and 1963**

(Not applicable to this report)

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

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As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

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# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

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**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products**--In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture**--This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment**--For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories**--Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

**Textile mill products • Apparel and leather • Chemicals, rubber, and plastics • Machinery and equipment • Primary metals • Intermediate metal products • Processed foods • Lumber, furniture, and paper products • Stone, clay, and glass products.**

A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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**U. S. DEPARTMENT OF COMMERCE**  
**Bureau of the Census**



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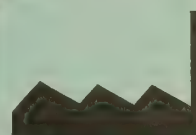
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OFFICIAL BUSINESS



# 1967 CENSUS OF MANUFACTURES



MC67(P)-32E-5

## INDUSTRY SERIES

### Mineral wool

SIC Code 3296

**preliminary  
report**

The Mineral Wool Industry includes establishments primarily engaged in manufacturing mineral wool and mineral wool insulation products made of such silicious materials as rock, slag, or glass, or combinations thereof. Establishments primarily engaged in manufacturing asbestos insulation products are classified in industries 3292 and 3293; and textile glass fibers in industry 3229.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classi-

fied in the Mineral Wool Industry amounted to \$449.1 million, an increase of 15 percent compared with 1963. Value added by manufacture at \$244.7 million in 1967 was 18 percent more than value added in 1963. Average employment in the industry was 14.7 thousand, the same as in 1963.

Of the \$449.1 million total value of shipments and other receipts of establishments classified as mineral wool, \$32.5 million were products primary to other industries; and \$14.4 million were receipts for miscellaneous activities. The industry shipments of primary products represented 93 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 90 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Special-ization ratio (per- cent)	Coverage ratio (per- cent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3296.--MINERAL WOOL														
1967 Census....	114	72	14.7	104.7	11.8	24.8	82.2	244.7	201.5	449.1	27.1	34.5	93	96
1966 ASM <sup>1</sup> .....	(NA)	(NA)	16.1	108.9	12.9	27.3	84.3	252.2	214.5	461.0	24.1	40.2	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	15.4	99.3	12.2	26.1	77.8	227.6	202.1	430.2	16.3	32.3	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	14.9	91.6	11.9	24.7	70.7	216.7	180.1	395.6	18.5	31.5	(NA)	(NA)
1963 Census.....	123	67	14.7	92.3	11.6	24.8	69.1	206.8	186.8	391.9	38.0	32.4	90	96
1962 ASM <sup>1</sup> .....	(NA)	(NA)	14.8	93.3	11.9	24.8	66.7	212.9	188.4	398.5	15.1	29.1	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	13.5	78.2	10.8	23.0	57.8	186.2	163.6	347.4	13.6	25.8	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	12.8	70.5	10.3	20.6	51.6	165.2	144.2	307.1	15.3	25.0	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	13.4	71.6	10.4	22.5	52.6	166.6	144.9	309.0	13.8	26.1	(NA)	(NA)
1958 Census <sup>2</sup> ....	102	62	11.9	59.1	9.0	18.7	42.7	133.5	107.5	240.9	10.4	21.3	95	95

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued September 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary  
Rocco C. Siciliano, Under Secretary  
**BUREAU OF THE CENSUS** George Hay Brown, Director

The total value of mineral wool shipped by all producers in 1967 was \$419.2 million of which \$402.3 million, or 96 percent, were shipped by plants classified in industry 3296, Mineral Wool, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 96 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

#### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3296, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-32J, Fibrous Glass.



TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
	INDUSTRY 3296.--MINERAL WOOL												
United States, total.....	114	72	14.7	104.7	11.8	24.8	82.2	244.7	201.5	449.1	27.1	14.7	206.8
Northeast.....	30	17	2.9	19.9	2.2	4.6	15.1	49.3	39.9	89.5	6.6	(D)	(D)
New Jersey.....	9	9	2.0	14.0	1.5	3.2	10.7	30.8	31.7	62.3	(D)	1.5	23.1
Pennsylvania.....	9	5	0.7	4.8	0.6	1.2	3.6	14.4	5.3	20.2	2.5	0.8	12.2
North Central.....	43	30	8.3	60.5	6.8	14.4	49.1	125.8	114.6	242.3	14.9	8.4	105.8
Indiana.....	10	8	1.6	10.8	1.3	2.9	8.3	22.7	19.1	41.6	(D)	1.8	18.5
East South Central....	8	6	0.4	2.3	0.3	0.6	1.5	5.1	3.9	9.1	0.3	0.5	5.3
Alabama.....	3	3	0.3	1.6	0.2	0.5	1.1	3.8	2.2	6.0	0.3	0.2	3.1
Texas.....	8	5	0.6	3.9	0.4	1.0	2.8	9.4	9.5	19.4	(D)	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3296--	MINERAL WOOL, TOTAL.....		(X)	419.2	(X)	356.0
32961--	Mineral wool for structural insulation, total.....		(X)	119.7	(X)	107.7
32961 11	Loose fiber (blowing and pouring) (shipped as such) and granulated fiber.....	1,000 short tons	270.0	19.2	241.3	19.1
32961 23	Building batts, blankets, and rolls: 4.5 inches or more thick.....	Million sq. ft.	274.9	13.1	127.7	6.1
32961 27	3.0 to 4.4 inches thick.....	..do.....	1,014.6	39.6	1,028.4	41.7
32961 33	2.0 to 2.9 inches thick.....	..do.....	561.5	22.2	581.8	21.8
32961 37	Less than 2.0 inches thick.....	..do.....	417.2	11.4	311.6	11.7
32961 51	Board (such as roof insulation).....	Million bd. ft.	(Z)	(Z)	(Z)	(Z)
32961 98	Other mineral wool for structural insulation.....		(X)	13.5	(X)	5.8
32961 00	Mineral wool for structural insulation, n.s.k.....		(X)	0.7	(X)	1.5
32962--	Mineral wool for industrial and equipment insulation, total.....		(X)	292.6	(X)	240.8
	Blankets (flexible) including fabricated pieces, rolls, and batts:					
32962 31	Plain.....	Million bd. ft.	(S)	79.3	(S)	93.9
32962 34	Coated.....	..do.....	(S)	3.0		
32962 36	Faced and metal meshed.....	..do.....	(S)	32.9		
32962 45	Molded insulation (such as special automotive, appliances, and aerospace items).....	Million lbs....	49.4	3.8	(NA)	(NA)
32962 51	Blocks and boards.....	Million bd. ft.	1,420.3	71.1	583.3	43.7
32962 61	Pipe insulation.....	Mil. lin. ft....	113.8	34.7	94.2	29.7
32962 71	Acoustical pads and boards.....	Million sq. ft.	148.6	32.7	355.7	53.5
32962 82	High temperature insulation fibers, including silica fiber and alumina-silica fiber.....	Million lbs....	24.0	6.0	(NA)	(NA)
32962 98	Other mineral fiber for industrial, equipment and appliance insulation, such as loose fiber (shipped as such) granulated fiber felts, insulating and finishing cements, etc.....		(X)	22.0	(X)	7.7
32962 00	Mineral wool for industrial and equipment insulation, n.s.k.....		(X)	7.1	(X)	12.3
32960 00	Mineral wool, n.s.k. (For companies with 10 or more employees. See Note.).....		(X)	6.1	(X)	7.5
32060 02	Mineral wool, n.s.k. (For companies with less than 10 employees. See Note.).....		(X)	0.8		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind.

(S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review. (X) Not applicable.

(Z) Less than 0.1 when rounded.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(Not applicable to this report)

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

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**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

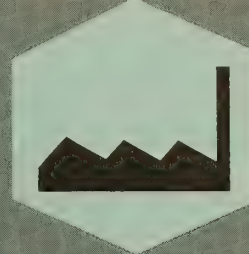
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-32E-6

## INDUSTRY SERIES

**preliminary  
report**

### Nonclay refractories

SIC Code 3297

The Nonclay Refractories Industry includes establishments primarily engaged in manufacturing refractories and crucibles made of materials other than clay. This industry also includes establishments primarily engaged in manufacturing all graphite refractories, whether of carbon bond or ceramic bond. Establishments primarily engaged in manufacturing clay refractories are classified in industry 3255.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Nonclay Refractories Industry amounted

to \$308.0 million, an increase of 23 percent compared with 1963. Value added by manufacture at \$158.8 million in 1967 was 23 percent more than value added in 1963. Average employment in the industry showed an increase of 15 percent from 1963 to a total of 9.9 thousand employees in 1967.

Of the \$308.0 million total value of shipments and other receipts of establishments classified as nonclay refractories, \$22.1 million were products primary to other industries; and \$9.8 million were receipts for miscellaneous activities. The industry shipments of primary products represented 93 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 94 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
INDUSTRY 3297.--NONCLAY REFRACTORIES														
1967 Census....	92	64	9.9	72.1	7.4	14.8	49.5	158.8	150.4	308.0	20.6	87.4	93	91
1966 ASM <sup>1</sup> .....	(NA)	(NA)	10.3	71.6	8.0	16.3	51.2	172.3	164.4	333.1	15.9	88.9	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	9.5	64.7	7.5	15.4	47.2	155.0	146.4	293.6	17.0	76.9	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	9.1	59.7	7.3	15.0	43.6	143.7	140.4	283.5	10.2	65.9	(NA)	(NA)
1963 Census....	93	68	8.6	53.4	6.8	13.5	38.7	129.1	123.1	250.2	9.3	71.3	94	88
1962 ASM <sup>1</sup> .....	(NA)	(NA)	*7.6	*44.9	*6.0	*11.5	*32.0	*102.9	*94.8	*197.7	*6.3	*62.0	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	*8.1	*46.2	*6.3	*11.9	*33.1	*106.3	*92.3	*199.8	*9.3	*62.7	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	*9.4	*51.1	*7.6	*14.1	*37.7	*118.6	*97.6	*213.4	*7.1	*66.0	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	*9.4	*51.6	*7.6	*14.5	*39.0	*121.4	*95.0	*209.6	*10.0	*60.9	(NA)	(NA)
1958 Census <sup>2</sup> ...	84	66	8.0	41.2	6.3	11.7	30.4	102.4	73.8	177.6	14.9	46.1	95	89

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued September 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary****Rocco C. Siciliano, Under Secretary****BUREAU OF THE CENSUS George Hay Brown, Director**

The total value of nonclay refractories shipped by all producers in 1967 was \$301.9 million of which \$276.0 million, or 91 percent, were shipped by plants classified in industry 3297, Nonclay Refractories, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 88 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3297, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MQ-32C. Refractories.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employ-ees or more (number)	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
	INDUSTRY 3297.--NONCLAY REFRACTORIES												
United States, total.....	92	64	9.9	72.1	7.4	14.8	49.5	158.8	150.4	308.0	20.6	8.6	129.1
Northeast.....	35	29	4.6	33.8	3.3	6.5	21.6	61.3	59.0	118.1	7.0	3.6	44.0
Pennsylvania.....	22	19	2.7	19.6	2.1	4.2	13.8	37.0	35.5	70.5	(D)	2.0	23.1
East North Central...	33	24	2.9	20.7	2.1	4.2	14.2	55.4	50.4	106.3	4.5	2.0	37.4
Ohio.....	16	11	1.6	12.1	1.2	2.3	7.8	34.8	28.3	63.1	2.9	1.0	15.5

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3297- --	NONCLAY REFRACTORIES, TOTAL:					
	As reported in the census of manufactures.....		(X)	301.9	(X)	256.8
	As reported on Census quarterly Form M32C.....		(X)	298.6	(X)	251.8
32970 12	Brick and shapes:					
	Silica brick and shapes.....	Million 9" equiv.....	71.0	14.7	119.3	22.5
32970 15	Magnesite and magnesite-chrome brick and shapes (magnesite predominating) (excluding molten cast and fused magnesite) <sup>1</sup>	...do.....	93.8	89.9	79.5	70.0
32970 21	Chrome and chrome-magnesite brick and shapes (chrome predominating) (excluding molten cast) <sup>1 2</sup>	...do.....	22.2	18.9	35.3	27.9
32970 33	Graphite crucibles, retorts, stopper heads, and other shaped refractories containing natural graphite.....	1,000 short tons.....	16.6	13.7	13.0	10.1
32970 52	Mullite brick and shapes made predominantly of kyanite, sillimanite, andalusite or synthetic mullite (excluding molten cast) <sup>1 2</sup>	Million 9" equiv.....	6.9	9.5	5.9	7.1
32970 53	Extra-high alumina brick and shapes made predominantly of fused bauxite, fused or dense-sintered alumina (excluding molten cast) <sup>1 2 3</sup>	...do.....	2.9	7.4	3.2	5.7
32970 48	Silicon carbide kiln furniture (made predominantly of silicon carbide).....	...do.....	1.2	4.1	3.0	9.6
32970 49	Silicon carbide brick and shapes (made predominantly of silicon carbide) except kiln furniture.....	...do.....	2.8	8.8		
32970 55	Zircon and zirconia brick and shapes (made predominantly of either of these materials).....	...do.....	1.5	5.4		
32970 56	Forsterite, pyrophyllite, molten-cast dolomite, dolomite-magnesite and other nonclay brick and shapes <sup>2 4</sup>	1,000 short tons.....	25.7	541.7	(NA)	30.3
32970 35	Carbon refractories; brick, blocks, and shapes, excluding those containing natural graphite.....					
32970 61	Mortars:					
	Basic bonding mortars (magnesite or chrome ore as principal component).....	...do.....	79.9	6.6	243.8	19.7
32970 63	Other nonclay refractory mortars.....	...do.....	31.6	5.5		
32970 91	Nonclay refractory castables (hydraulic setting) and portland or calcium aluminate cements.....	...do.....	31.5	6.9	13.3	2.1
32970 65	Plastic refractories and ramming mixes, wet and dry types:					
	Basic (magnesite, dolomite, or chrome ore predominating).....	...do.....	154.6	17.5	182.7	22.0
32970 67	Other nonclay plastic refractories and ramming mixes.....	...do.....	57.6	12.6		
32970 92	Nonclay gunning mixes.....	...do.....	257.2	22.2	233.1	521.2
32970 94	Other nonclay refractory materials sold in lump or ground form <sup>6</sup> ....	...do.....	127.3	13.4		

Note: Detail does not add to total due to independent rounding.

(X) Not applicable.

<sup>1</sup>Molten cast brick and shapes are included with "Forsterite, pyrophyllite, molten-cast dolomite, dolomite-magnesite and other nonclay brick and shapes."<sup>2</sup>Molten cast refractories are made by fusing refractory oxides as in an electric furnace and pouring the molten material into molds to form finished shapes.<sup>3</sup>"Fused" as applied to bauxite and alumina means complete melting, as in an electric furnace; after cooling, the product is crushed and graded for use in the refractory. Dense-sintered alumina refers to heat treatment (short of melting) to render it relatively volume-stable for use in a refractory.<sup>4</sup>Quantity is estimated for those plants which reported only value. This estimate is between 10 and 30 percent of the total quantity shown for this product.<sup>5</sup>Data for carbon refractories are combined with "Forsterite, pyrophyllite, molten-cast dolomite, dolomite-magnesite and other nonclay brick and shapes" to avoid disclosing figures of individual companies. In 1963, data for carbon refractories was combined with "Nonclay gunning mixes" and "other nonclay refractory materials, sold in lump or ground form."<sup>6</sup>Includes shipments for direct use as finished refractory products by establishments classified in "manufacturing" industries, and excludes shipments to refractory producers for reprocessing in the manufacture of brick and other refractories.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(Not applicable to this report)



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3297, these small establishments accounted for approximately 0.3 percent of payrolls and 0.3 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.

# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

Textile mill products • Apparel and leather • Chemicals, rubber, and plastics • Machinery and equipment • Primary metals • Intermediate metal products • Processed foods • Lumber, furniture, and paper products • Stone, clay, and glass products.

A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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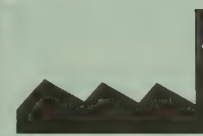
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**OFFICIAL BUSINESS**

**POSTAGE AND FEES PAID  
U.S. DEPARTMENT OF COMMERCE**



# 1967 CENSUS OF MANUFACTURES



MC67(P)-32E-7

## INDUSTRY SERIES

**preliminary  
report**

### Nonmetallic mineral products, n.e.c.

SIC Code 3299

The Nonmetallic Mineral Products, Not Elsewhere Classified, Industry includes establishments primarily engaged in the factory production of statuary and art goods made of plaster of Paris and papier mache, and in manufacturing sand lime products and other nonmetallic mineral products, not elsewhere classified.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Nonmetallic Mineral Products, N.E.C., Industry amounted to \$100.7 million, an increase of 5 percent compared with 1963. Value added

by manufacture at \$57.2 million in 1967 was 7 percent more than value added in 1963. Average employment in the industry showed a decrease of 4 percent from 1963 to a total of 5.3 thousand employees in 1967.

Of the \$100.7 million total value of shipments and other receipts of establishments classified as nonmetallic mineral products, n.e.c., \$16.4 million were products primary to other industries; and \$5.9 million were receipts for miscellaneous activities. The industry shipments of primary products represented 83 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 86 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3299. --NONMETALLIC MINERAL PRODUCTS, N. E. C.														
1967 Census....	331	54	5.3	30.9	4.3	8.3	21.2	57.2	43.9	100.7	2.2	11.7	81	89
1966 ASM <sup>1</sup> .....	(NA)	(NA)	6.4	35.9	5.2	10.7	24.7	68.7	49.1	115.9	*3.4	14.7	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	6.2	32.3	5.1	10.9	23.1	66.1	48.9	114.3	*4.4	12.4	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	5.3	25.9	4.2	8.2	17.9	53.1	46.1	98.5	1.5	10.7	(NA)	(NA)
1963 Census....	320	56	5.5	27.1	4.4	8.3	18.2	53.3	43.4	96.2	2.2	11.3	86	96
1962 ASM <sup>1</sup> .....	(NA)	(NA)	*2.0	*5.6	*1.8	*2.4	*3.7	*18.7	*23.8	*43.1	*1.3	*7.1	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	*1.9	*5.8	*1.6	*3.0	*4.3	*19.8	*26.9	*48.3	*1.5	*7.2	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	*2.2	*11.5	*1.7	*5.7	*5.6	*23.4	*29.1	*52.6	*1.4	*7.3	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	*7.2	*25.1	*6.1	*13.8	*19.0	*42.3	*37.0	*79.9	*1.1	*8.1	(NA)	(NA)
1958 Census <sup>2</sup> ...	254	51	4.3	17.0	3.4	6.5	11.6	32.0	26.9	58.9	1.2	8.3	85	85

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 4 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1965

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director



The total value of nonmetallic mineral products, n.e.c., shipped by all producers in 1967 was \$88.3 million of which \$78.4 million, or 89 percent, were shipped by plants classified in industry 3299, Nonmetallic Mineral Products, N.E.C., while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 96 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)						
INDUSTRY 3299, --NONMETALLIC MINERAL PRODUCTS, N. E. C.													
United States, total.....	331	54	5.3	30.9	4.3	8.3	21.2	57.2	43.9	100.7	2.2	5.5	53.3
New England.....	15	3	0.6	2.9	0.5	0.9	1.9	5.4	5.1	10.3	0.2	(D)	(D)
Middle Atlantic.....	89	18	2.0	13.0	1.5	3.0	8.2	23.3	16.0	39.2	0.8	1.9	19.8
New York.....	57	9	1.4	9.7	1.0	2.0	5.8	18.2	12.0	29.9	0.7	1.1	12.6
New Jersey.....	21	5	0.3	1.5	0.3	0.5	1.2	2.9	1.3	4.2	(Z)	0.4	4.1
Pennsylvania.....	11	4	0.3	1.8	0.2	0.4	1.2	2.3	2.7	5.2	0.1	0.4	3.2
East North Central....	62	11	1.2	7.1	1.0	2.1	5.5	14.2	11.1	25.0	0.5	1.3	13.9
Ohio.....	18	4	0.4	2.3	0.4	0.7	1.7	5.7	3.3	9.0	0.2	0.5	5.4
Michigan.....	9	2	0.1	0.8	0.1	0.2	0.5	1.4	0.6	2.0	(D)	0.1	1.3
West North Central....	26	3	0.2	0.8	0.1	0.2	0.6	1.2	0.7	2.0	(Z)	0.1	1.1
Missouri.....	15	3	0.1	0.5	0.1	0.2	0.4	0.9	0.5	1.4	(Z)	(D)	(D)
South.....	58	11	0.9	3.9	0.8	1.5	2.8	7.9	5.2	13.1	0.4	(D)	(D)
South Atlantic.....	27	9	0.7	2.6	0.6	1.1	2.0	5.3	3.3	8.5	(D)	(D)	(D)
West.....	81	8	0.5	3.2	0.4	0.7	2.1	5.2	5.8	11.1	0.3	(D)	(D)
California.....	56	7	0.4	2.6	0.3	0.6	1.7	4.1	5.1	9.2	(D)	0.4	5.5

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.

**TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963**

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3299- --	NONMETALLIC MINERAL PRODUCTS, N.E.C.....		(X)	88.3	(X)	83.0
	Sheet mica products:					
32990 53	Built-up sheet mica products.....		(X)	23.0	(X)	14.1
32990 55	Other sheet mica products.....		(X)	19.2	(X)	14.0
32990 61	Sand-lime brick, block, and tile.....	Million brick..	66.7	2.9	(NA)	4.9
32990 81	Statuary and art goods (factory production).....		(X)	12.8	(X)	13.9
32990 98	Other nonmetallic mineral products, including magnesite floor composition, stucco, sapphire boule, etc.....		(X)	16.5	(X)	30.3
32990 00	Nonmetallic mineral products, n.e.c., n.s.k. (For companies with 10 or more employees. See Note.).....		(X)	6.9	(X)	5.9
32990 02	Nonmetallic mineral products, n.e.c., n.s.k. (For companies with less than 10 employees. See Note.).....		(X)	7.0		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.e.c. Not elsewhere classified. n.s.k. Not specified by kind. (X) Not applicable.

**TABLE 4. Materials Consumed, by Kind: 1967 and 1963**

(Not applicable to this report)

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3299, these small establishments accounted for approximately 7 percent of payrolls and 7 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





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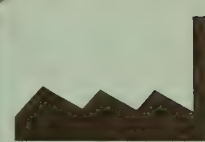








# 1967 CENSUS OF MANUFACTURES



INDUSTRY SERIES

**preliminary  
report**

## Blast furnaces and steel mills

SIC Code 3312

Blast Furnaces (Including Coke Ovens) Steel Works and Rolling Mills include establishments primarily engaged in manufacturing of hot metal, pig iron, silvery pig iron, and ferroalloys from ore and iron and steel scrap; converting pig iron, scrap iron and scrap steel into steel; and in hot-rolling iron and steel into basic shapes such as plates, sheets, strips, rods, bars and tubing. Merchant blast furnaces and byproduct or beehive coke ovens are also included in this industry.

Establishments primarily engaged in manufacturing ferro and nonferrous additive alloys by electrometallurgical processes are classified in industry 3313.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified as Blast Furnaces and Steel Mills amounted to \$19,480.2 million, an increase of 17 percent compared with 1963. Value added by manufacture at \$8,880.4 million in 1967 was 15 percent more than value added in 1963. Average employment in the industry showed an increase of 6 percent from 1963 to a total of 532.6 thousand employees in 1967.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials <sup>3</sup>	Value of shipments <sup>3</sup>	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
INDUSTRY 3312.--BLAST FURNACES AND STEEL MILLS														
1967 Census....	322	253	532.6	4,385.0	433.5	841.0	3,370.9	8,880.4	10,876.7	19,480.2	1,658.4	3,929.2	(NA)	(NA)
1966 ASM <sup>1</sup> .....	(NA)	(NA)	559.4	4,540.7	460.4	904.9	3,554.1	9,643.6	11,829.5	21,193.9	1,595.9	3,644.5	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	565.4	4,431.6	464.5	912.9	3,498.5	9,379.8	11,387.3	20,841.7	1,364.0	3,218.5	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	532.9	4,117.9	443.9	880.9	3,249.7	8,479.6	10,537.9	18,840.1	1,282.9	3,248.2	(NA)	(NA)
1963 Census.....	288	247	500. <sup>2</sup>	3,711.6	412.3	791.4	2,892.0	7,699.5	8,958.7	16,611.1	908.4	3,146.6	(NA)	(NA)
1962 ASM <sup>1</sup> .....	(NA)	(NA)	502.2	3,612.1	406.6	764.6	2,753.2	6,620.9	8,698.8	15,571.6	707.8	3,179.6	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	503.4	3,523.2	409.1	767.6	2,670.2	6,546.3	8,529.9	14,873.3	805.5	3,353.0	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	550.0	3,629.4	449.6	831.8	2,777.2	6,844.4	8,917.3	15,738.8	1,190.7	3,058.8	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	507.5	3,448.4	419.4	776.5	2,636.7	6,823.4	8,533.1	15,628.7	669.3	2,812.5	(NA)	(NA)
1958 Census <sup>2</sup> ...	291	260	511.4	3,183.5	417.2	765.9	2,416.0	6,062.2	7,472.0	13,422.6	959.0	2,997.2	(NA)	(NA)

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

<sup>3</sup>The value of shipments and cost of materials for this industry include extensive duplications arising from shipments between establishments in the same industry classification. For further explanations see text.

issued January 1970

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary  
Rocco C. Siciliano, Under Secretary  
Harold C. Passer, Assistant Secretary for Economic Affairs  
**BUREAU OF THE CENSUS** George Hay Brown, Director

Data on cost of materials and value of shipments of the Blast Furnaces and Steel Mills Industry include extensive duplication resulting from the transfer of products such as coke to establishments producing pig iron; the transfer of pig iron from nonintegrated blast furnaces to steel works; and the fact that considerable quantities of steel ingots, semifinished shapes and finished shapes and forms are transferred from one steel mill to another for further processing. The value of such shipments are

duplicated in the total value of shipments. A corresponding duplication enters into the total cost of materials. The data shown for value added by manufacture (value of shipments less cost of materials, etc.) avoid this duplication.

In view of the duplication in value of shipments, the exact "primary product specialization ratio" and the exact "coverage ratio" for this industry have not been computed.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3312, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-33B, Steel Mill Products

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3312.--BLAST FURNACES AND STEEL MILLS													
United States, total.....	322	253	532.6	4,385.0	433.5	841.0	3,370.9	8,880.4	10,876.7	19,480.2	1,658.4	500.5	7,699.5
New England.....	7	5	2.9	23.3	2.2	4.3	17.0	51.8	47.8	99.3	3.8	2.7	33.7
Middle Atlantic.....	114	93	196.7	1,574.5	159.4	304.3	1,204.3	3,081.5	3,786.8	6,768.0	481.1	180.4	2,437.5
Pennsylvania.....	79	70	165.0	1,322.4	134.0	255.0	1,009.9	2,652.5	3,237.3	5,810.4	426.3	150.3	2,010.1
North Central.....	102	84	217.4	1,828.3	178.7	350.1	1,420.2	3,836.9	5,150.4	8,863.2	883.4	206.9	3,382.5
Ohio.....	32	31	79.9	647.6	66.9	128.7	515.8	1,423.8	1,822.1	3,222.6	(D)	79.6	1,268.8
Indiana.....	13	11	62.8	531.5	50.7	100.6	405.8	1,072.0	1,643.3	2,648.9	333.8	57.0	1,019.3
Illinois.....	28	24	43.9	373.7	35.6	70.0	282.3	748.1	784.7	1,509.6	(D)	41.6	547.2
Michigan.....	17	10	22.3	206.3	18.6	37.4	163.5	470.8	774.9	1,243.3	(D)	21.3	433.6
South.....	59	46	83.8	693.0	68.2	131.5	529.5	1,387.0	1,293.6	2,644.6	243.2	82.0	1,401.1
East South Central..	27	24	29.5	240.3	24.4	46.5	184.7	491.5	439.3	917.2	89.6	(D)	(D)
Tennessee.....	6	5	1.2	6.5	1.1	2.1	5.4	14.6	9.3	23.3	(D)	1.4	10.3
Alabama.....	12	12	20.9	171.6	17.3	32.2	129.6	343.9	294.0	626.2	44.3	(D)	(D)
West.....	40	25	31.9	265.9	25.0	50.7	199.9	523.3	598.0	1,105.1	47.0	28.4	444.8

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Shipments including interplant transfers						Produced and consumed in the same plant in the manufacture of other products (quantity)				
			Production (quantity)	Total shipments		Shipments to other companies		Transfers to other plants of the same company					
				Quantity	Value (million dollars)	Quantity	Value (million dollars)	Quantity		Value (million dollars)			
1967													
3312- --	BLAST FURNACE (INCLUDING COKE OVEN), STEEL WORKS AND ROLLING MILL PRODUCTS, TOTAL.....		(X)	(X)	20,641.1	(X)	(X)	(X)	(X)				
33121 --	Coke oven, blast furnace, and selected electrometallurgical products.....		(X)	(X)	1,511.7	(X)	(X)	(X)	(X)				
	Coke oven products: <sup>1</sup>												
33121 11	Coke, except screenings and breeze....	1,000 s. tons	62,742.5	21,517.3	401.5	8,233.0	176.5	13,284.2	225.0				
33121 12	Screenings and breeze.....	..do.....	(NA)	2,050.7	20.4	1,387.1	12.9	663.6	7.5				
33121 31	Coke oven gas.....	Billion cu. ft.....	970.9	85.3	18.8	38.2	9.0	47.0	9.8				
	Coke oven byproducts:												
33121 41	Ammonia (sulfate and liquor).....	.....	(X)	(X)	14.2	(X)	(D)	(X)	(D)				
33121 51	Crude tar.....	Million gals.	799.1	381.6	36.2	320.5	29.6	61.1	6.6				
33121 61	Tar derivatives.....	.....	(X)	(X)	28.8	(X)	19.4	(X)	(X)				
33121 71	Crude light oil.....	Million gals.	229.0	}	(X)	28.8	(X)	19.4	(X)				
33121 81	Light oil derivatives.....	..do.....	123.0							109.3	23.3	(D)	(D)
33121 83	Other coke-oven products.....	.....	(X)	(X)	( <sup>2</sup> )	(X)	(X)	(X)	(X)				
	Blast furnace products:												
33121 91	Pig iron, including pig iron with silicon content up to and including 6 percent.....	1,000 s. tons	84,383.4	10,406.1	563.2	4,315.7	240.9	6,090.4	322.8				
33121 92	Slag.....	..do.....	(X)	}	(X)	284.3	(X)	(D)	(X)				
33121 93	Sinter from ore, flue dust, and other materials.....	..do.....	48,973.7							(D)	(X)	(D)	48,151.8
33121 94	Blast furnace gas.....	Billion cu. ft.....	5,664.1										
33121 85, 86, 87, 89, 33131 11, 33134 11, 98	Blast furnace ferroalloys.....	1,000 s. tons	(NA)	1,594.7	321.0	(D)	(D)	(D)	(D)				
	Other ferroalloys, except ferrochrome and ferrosilicon.....	..do.....	(NA)						(NA)				
1963													
3312- --	BLAST FURNACE (INCLUDING COKE OVEN), STEEL WORKS AND ROLLING MILL PRODUCTS, TOTAL.....		(X)	(X)	17,261.7	(X)	(X)	(X)	(X)				
33121 --	Coke oven, blast furnace, and selected electrometallurgical products.....		(X)	(X)	1,475.4	(X)	(X)	(X)	(X)				
	Coke oven products: <sup>1</sup>												
33121 11	Coke, except screenings and breeze....	1,000 s. tons	52,592.0	18,774.0	303.3	8,862.0	152.3	9,912.0	151.0				
33121 12	Screenings and breeze.....	..do.....	3,434.0	1,415.0	10.8	919.0	7.3	496.0	3.6				
33121 31	Coke oven gas.....	Billion cu. ft.....	1,263.4	144.5	31.4	43.6	11.6	100.9	19.7				
	Coke oven byproducts:												
33121 41	Ammonia (sulfate and liquor).....	.....	(X)	(X)	18.4	(X)	18.1	(X)	0.3				
33121 51	Crude tar.....	Million gals.	651.3	354.2	37.2	287.0	30.4	67.1	6.8				
33121 61	Tar derivatives.....	.....	(X)	(X)	20.4	}	(X)	25.5	(X)				
33121 71	Crude light oil.....	Million gals.	195.3	68.5	7.7					29.1	11.9	2.3	
33121 81	Light oil derivatives.....	..do.....	194.2	131.5	31.4	(X)	(X)	(X)					
33121 83	Other coke-oven products.....	.....	(X)	(X)	( <sup>2</sup> )								
	Blast furnace products:												
33121 91	Pig iron, including pig iron with silicon content up to and including 6 percent.....	1,000 s. tons	70,741.3	12,475.4	660.2	3,219.1	198.1	9,256.3	462.1				
33121 92	Slag.....	..do.....	(X)	}	(X)	2108.3	(X)	(D)	(D)				
33121 93	Sinter from ore, flue dust, and other materials.....	..do.....	44,675.2							}	40,416.4		
33121 94	Blast furnace gas.....	Billion cu. ft.....	3,760.3									}	3,691.0
33121 85, 86, 89, 33131 11, 33134 11, 98	Blast furnace ferroalloys.....	1,000 s. tons	1,381.4	1,212.2	2246.4	(D)	(D)	(D)	(D)				
	Other ferroalloys, except ferrochrome and ferrosilicon.....	..do.....											

See footnotes at end of table.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3312- --	BLAST FURNACES (INCLUDING COKE OVENS), STEEL WORKS, AND ROLLING MILLS--Continued					
33122 --	Steel ingot and semifinished shapes: <sup>3</sup>					
	As reported in census of manufactures.....		(X)	2,526.5	(X)	2,034.6
	As reported on Annual Form MA-33B.....		(X)	2,484.6	(X)	1,978.3
33123 --	Tin mill products, hot rolled sheet and strip: <sup>3</sup>					
	As reported in census of manufactures.....		(X)	4,429.1	(X)	3,969.3
	As reported on Annual Form MA-33B.....		(X)	4,596.5	(X)	3,931.7
33124 --	Hot rolled bars and bar shapes, plates: <sup>3</sup>					
	As reported in census of manufactures.....		(X)	4,462.3	(X)	3,607.8
	As reported on Annual Form MA-33B.....		(X)	4,481.4	(X)	3,629.0
	Steel wire: <sup>3</sup>					
	As reported on Annual Form MA-33B.....		(X)	645.6	(X)	587.8
33125 --	As reported in census of manufactures.....		(X)	678.1	(X)	621.6
33155 --			(X)	355.8	(X)	364.0
33125 00	Made in steel mills (industry 3312).....		(X)	322.5	(X)	257.6
33155 00	Made in steel wire drawing (industry 3315) and other industries		(X)		(X)	
	Steel pipe and tube: <sup>3</sup>					
	As reported on Annual Form MA-33B.....		(X)	2,440.5	(X)	1,797.0
33126 --	As reported in census of manufactures.....		(X)	2,437.3	(X)	1,887.5
33176 --			(X)	1,266.7	(X)	1,137.4
33126 00	Made in steel mills (industry 3312).....		(X)	1,170.6	(X)	750.0
33176 00	Made in steel pipe and tubes (industry 3317) and other industries.....		(X)		(X)	
	Cold rolled steel sheet and strip: <sup>3</sup>					
	As reported on Annual Form MA-33B.....		(X)	2,985.9	(X)	2,781.6
33127 --	As reported in census of manufactures.....		(X)	3,225.6	(X)	2,872.9
33167 --			(X)	2,495.3	(X)	2,464.4
33127 00	Made in steel mills (industry 3312).....		(X)	730.3	(X)	408.5
33167 00	Made in cold finishing of steel shapes (industry 3316) and other industries.....		(X)		(X)	
	Cold finished steel bars, and bar shapes: <sup>3</sup>					
	As reported on Annual Form MA-33B.....		(X)	613.4	(X)	476.1
33128 --	As reported in census of manufactures.....		(X)	605.2	(X)	472.7
33168 --			(X)	211.1	(X)	199.4
33128 00	Made in steel mills (industry 3312).....		(X)	394.1	(X)	273.4
33168 00	Made in cold finishing of steel shapes (industry 3316) and other industries.....		(X)		(X)	
33129 --	Press and hammer steel forgings: <sup>4</sup>		(X)	442.8	(X)	294.4
33919 --			(X)	195.2	(X)	120.7
33129 --	Made in steel works (industry 3312).....	1,000 s. tons.	(X)	247.6	(X)	173.7
33919 --	Made in steel forgings (industry 3391) and other industries.....		(X)		(X)	
	Open die hammer forgings:					
33129 21	Carbon steel.....	1,000 s. tons.	123.9	56.1	118.9	52.5
33919 21						
33129 23	Alloy steel (except stainless).....	do.....	57.8	64.3	52.0	58.5
33919 22						
33129 23	Made in industry 3312.....	do.....	10.0	12.5	12.5	19.6
33919 22	Made in industry 3391 and other industries.....	do.....	47.8	51.8	39.5	38.9
33129 25						
33919 23	Stainless steel.....	do.....	8.5	21.4	4.1	10.2
	Open die press forgings:					
33129 61	Carbon steel.....	do.....	164.6	74.1	127.2	45.6
33919 41						
33129 61	Made in industry 3312.....	do.....	46.5	24.7	21.3	11.1
33919 41	Made in industry 3391 and other industries.....	do.....	118.1	49.4	105.8	34.4
33129 63						
33919 42	Alloy steel (except stainless).....	do.....	248.8	199.3	130.0	101.1
33129 63						
33919 42	Made industry 3312.....	do.....	135.6	137.9	49.8	52.5
33129 63	Made in industry 3391 and other industries.....	do.....	113.2	61.4	80.2	48.6

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3312- --	BLAST FURNACES (INCLUDING COKE OVENS), STEEL WORKS, AND ROLLING MILLS--Continued					
	Open die press forgings--Continued					
33129 65	Stainless steel.....	1,000 s. tons.	3.7	8.2	2.5	5.1
33919 43						
33129 00	Open die hammer and press forgings, n.s.k.....		(X)	19.4	(X)	21.4
33919 00						
33120 41	Other steel mill products, except wire products (including blast furnace and steel mill products not specified by kind, code 33120 00). (For companies with 10 or more employees. See Note.) <sup>3</sup>					
	As reported on Annual Form MA-33B.....		(X)	277.6	(X)	184.4
	As reported in census of manufactures.....		(X)	319.7		
33120 02	Steel mill products, n.s.k. (For companies with fewer than 10 employees in 1967. See Note.).....		(X)	2.8	(X)	225.8

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or from related figures. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Excludes quantities produced in byproduct coke ovens operated in conjunction with utilities manufacturing and distributing gas.

<sup>2</sup>Data for product code 3312183 included with product codes 3312192, 3312193 and 3312194.

<sup>3</sup>Excludes shipments of steel processed on a conversion basis for nonsteel producing companies. Detailed data by shape and grade and net shipments figures appear in Current Industrial Reports, Series MA-33B "Steel Mill Products."

<sup>4</sup>These figures are not strictly comparable with tonnage shipments shown in Current Industrial Reports Series MA-33C, Commercial Steel Forgings in that the latter includes only forgings for sale, whereas the 1967 and 1963 Censuses of Manufactures include interplant transfers of forgings. Accordingly, a direct comparison with the monthly Current Industrial Reports Series is not possible. Forgings produced and consumed within the same plant are not included in either the census or the Current Industrial Reports figures. The estimated annual totals reported in the Current Industrial Reports survey for commercial steel forgings were as follows:

Item	1967	1963
	(1,000 short tons)	(1,000 short tons)
Open die hammer and press forgings:		
Carbon.....	187.9	156.1
Alloy (including stainless).....	211.9	219.9

1967 CENSUS OF MANUFACTURES  
TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	Total		Fully integrated works <sup>1</sup>		Partially integrated works with blast furnaces <sup>1</sup>		Partially integrated works without blast furnaces <sup>1</sup>		Nonintegrated works <sup>1</sup>	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
			1967									
	INDUSTRY 3312.--BLAST FURNACES AND STEEL MILLS											
	Materials, containers, and supplies, total.....		(X)	<sup>2</sup> 9,846.0								
121120	Coal used in the production of coke.....	1,000 s. tons	91,867.2	879.8								
	Iron ore, including manganese:											
101112	Crude.....	Gross wt. 1,000 s. tons	80,721.8	807.8								
101123	Concentrates.....	do.....	14,898.6	165.7								
101125	Agglomerates.....	do.....	47,386.5	623.1								
106220	Manganese ore including ferruginous (containing 10 percent manganese).....	do.....	( <sup>3</sup> )	( <sup>3</sup> )								
331051	Pig iron <sup>4</sup> .....	1,000 s. tons	10,688.1	420.5								
999811	Iron and steel purchased scrap (except rails for re-rolling).....	do.....	26,690.3	730.1								
331081	Steel rails for rerolling.....	do.....	308.0	16.6								
	Nonferrous metals, alloys and ferroalloys:											
333402	Aluminum.....	do.....	66.8	31.4								
333113	Copper, including both refined, unalloyed and copper-base alloy raw materials.....	do.....	14.9	12.5								
333971	Nickel.....	do.....	43.8	72.1								
333975	Tin.....	do.....	34.3	105.0								
333232	Lead.....	do.....	9.0	3.0								
333348	Zinc.....	do.....	276.5	80.4								
331312	Ferromanganese <sup>5</sup> .....	do.....	910.8	146.6								
331320	Ferrochromium.....	do.....	288.8	83.6	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
331330	Ferrosilicon.....	do.....	250.9	44.2								
331343	Ferromolybdenum.....	do.....	11.3	31.5								
331340	Spiegeleisen <sup>6</sup> .....	do.....	15.1	1.4								
331345	Ferronickel.....	do.....	45.2	41.9								
331342	Other ferroalloys, including ferrotungsten, and silvery iron <sup>7</sup> .....	do.....	210.6	96.6								
329502	Dead-burned magnesia.....	do.....	( <sup>3</sup> )	( <sup>3</sup> )								
281930	Sulfuric acid (100 percent H <sub>2</sub> SO <sub>4</sub> ) <sup>8</sup> .....	do.....	1,086.7	27.6								
281340	Oxygen (including both high and low purity) <sup>9</sup> .....	Mil. cu. ft.	144,325.8	91.7								
325501	Clay refractories.....	1,000 s. tons	1,287.1	80.7								
329701	Nonclay refractories.....	do.....	2,939.7	118.9								
332111	Gray iron ingot molds <sup>10</sup> .....	do.....	1,670.1	129.4								
	Fluxes:											
329503	Limestone.....	do.....	18,861.4	55.3								
327403	Lime, including quicklime and dead-burned dolomite.....	do.....	5,689.2	69.6								
329505	Fluorspar.....	do.....	397.4	16.6								
329506	Other fluxes.....	do.....	5,237.1	27.0								
331005	Ingots, semifinished shapes (blooms, billets, etc.) and other steel shapes received for further processing).....		(X)	2,346.5								
970099	All other materials and components, parts, containers and supplies consumed.....		(X)	<sup>11</sup> 2,430.8								
976000	Materials and components, parts, containers and supplies consumed, n.s.k. <sup>12</sup> .....		(X)	58.1								

See footnotes at end of table.



TABLE 4. Materials Consumed, by Kind: 1967 and 1963—Continued

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	Total		Fully integrated works <sup>1</sup>		Partially integrated works with blast furnaces <sup>1</sup>		Partially integrated works without blast furnaces <sup>1</sup>		Nonintegrated works <sup>1</sup>	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
			1963									
	INDUSTRY 3312.--BLAST FURNACES AND STEEL MILLS--Continued											
	Materials, containers, and supplies, total.....		(X)	<sup>2</sup> 7,983.7	(X)	<sup>2</sup> 3,424.8	(X)	<sup>2</sup> 778.2	(X)	<sup>2</sup> 1,517.4	(X)	<sup>2</sup> 2,204.4
121120	Coal used in the production of coke.....	1,000 s. tons	76,254.5	677.9	57,367.4	522.6	-	-	-	-	18,887.1	155.4
101101	Iron ore, including manganese.....	Gross wt.										
		1,000 s. tons	11,306.1	1,374.4	76,235.5	882.5	16,729.1	216.9	1,344.3	11.8	19,497.2	263.2
331051	Pig iron <sup>4</sup> .....	1,000 s. tons	8,682.6	382.0	(D)	(D)	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	(D)	(D)
999811	Iron and steel purchased scrap (except rails for re-rolling).....	...do.....	27,964.6	704.1	12,798.6	302.8	2,729.6	80.0	10,792.4	293.8	1,644.5	27.6
331081	Steel rails for rerolling....	...do.....	406.7	19.5	-	-	-	-	(D)	(D)	(D)	(D)
	Nonferrous metals, alloys and ferroalloys:											
333401	Aluminum.....	...do.....	54.5	22.8	30.9	12.4	8.3	3.6	11.5	5.1	3.9	1.7
333122	Copper, including both refined, unalloyed and copper-base alloy raw materials.....	...do.....	19.2	11.6	(D)	(D)	1.2	0.1	1.4	0.1	(D)	(D)
333348	Zinc.....	...do.....	297.9	71.6	178.1	43.3	(D)	(D)	(D)	(D)	68.9	16.1
331312	Ferromanganese <sup>5</sup> .....	...do.....	771.4	131.4	492.7	84.1	106.3	18.8	761.9	26.7	10.5	1.8
331320	Ferrochromium.....	...do.....	231.3	65.0	(D)	(D)	67.2	18.1	132.3	36.0	(D)	(D)
331330	Ferrosilicon.....	...do.....	208.7	32.4	93.6	11.9	32.0	6.0	80.1	14.1	3.0	0.1
331340	Spiegeleisen <sup>6</sup> .....	...do.....	23.2	2.2	11.1	0.1	(D)	(D)	7.1	0.1	(D)	(D)
331342	Other ferroalloys, including ferrotungsten, silvery iron and ferronickel <sup>7</sup> .....	...do.....	193.8	86.4	105.8	32.1	(D)	(D)	59.9	34.1	(D)	(D)
281930	Sulfuric acid (100 percent H <sub>2</sub> SO <sub>4</sub> ) <sup>8</sup> .....	...do.....	1,175.5	25.1	770.5	16.4	108.4	2.4	94.6	2.1	201.9	4.2
281340	Oxygen (including both high and low purity) <sup>9</sup> .....	Mil. cu. ft.	78,707.3	74.7	52,544.8	43.4	13,287.4	11.3	11,613.5	18.4	1,261.6	1.6
325501	Clay refractories.....	1,000 s. tons	1,565.6	83.4	767.8	43.2	445.5	20.9	307.4	17.4	44.9	2.0
329701	Nonclay refractories.....	...do.....	2,803.0	113.5	2,184.3	80.2	270.2	11.1	305.3	20.6	43.3	1.6
331005	Ingot, semifinished shapes (blooms, billets, etc.) and other steel shapes received for further processing).....		(X)	1,678.4	(X)	270.6	(X)	31.8	(X)	177.4	(X)	1,198.6
970099	All other materials and components, parts, containers and supplies consumed.....		(X)	<sup>11</sup> 2,165.3	(X)	<sup>11</sup> 912.4	(X)	<sup>11</sup> 317.5	(X)	<sup>11</sup> 552.4	(X)	<sup>11</sup> 382.9
976000	Materials and components, parts, containers and supplies consumed, n.s.k. <sup>12</sup>		(X)	262.2	(X)	96.6	(X)	-	(X)	65.9	(X)	99.8

- Represents zero. (D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or from related figures. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Definitions are as follows: Fully integrated works are establishments having coke ovens, blast furnaces, steel works, and rolling and finishing mills or a forging department; partially integrated works with blast furnaces have blast furnaces, steel works, and rolling and finishing mills or a forging department; partially integrated works without blast furnaces have steel works, and rolling and ovens, byproduct coke ovens operated independently of blast furnaces and steel departments; merchant blast furnaces, and establishments with hot rolling and finishing operations. In a few cases, operations which are, in fact, fully integrated, are classified as partially integrated or nonintegrated because separate establishment reports were collected either because the operations are conducted in different cities or towns, or the company treats the operations separately for their own administrative reasons. Data on materials consumed by subindustry for 1967 will be published in the final report for this industry.

<sup>2</sup>Total cost of materials, etc., contains extensive duplication. This duplication arises because the products of some establishments are used as materials by other establishments in the same industry. For the industry as a whole, the extent of this duplication is approximated by totaling the cost of pig iron, ingots, and semifinished shapes purchased for further processing. Estimated unduplicated cost of materials obtained by this method is \$7,079 million. The comparable 1963 figure was \$5,923 million. The extent of duplication for subindustries cannot be measured accurately because such purchases cross subindustry lines.

<sup>3</sup>Included with material code 970099, "All other materials and components, parts, containers, and supplies consumed," to avoid disclosing figures of individual companies.

<sup>4</sup>In addition, pig iron produced and consumed in the same establishment in 1967 was 72,379 thousand short tons. In 1963, the comparable figure was 56,369 thousand short tons. For 1963, the consumption total for partially integrated works including both those with and those without blast furnaces was 6,645 thousand short tons at a delivered cost of \$305 million.

<sup>5</sup>In addition, 214 thousand short tons of ferromanganese were produced and consumed in the same establishment in 1967. The comparable figure for 1963 was 56 thousand short tons.

<sup>6</sup>Excludes spiegeleisen produced and consumed in the same establishment.

<sup>7</sup>In addition, 14 thousand short tons of other ferroalloys were produced and consumed in the same establishment in 1967. The comparable figure for 1963 was 16 thousand short tons.

<sup>8</sup>Excludes sulfuric acid produced and consumed in the same establishment.

<sup>9</sup>In addition, 10,916 million cubic feet of oxygen were produced and consumed in the same establishment in 1967. For 1963 the comparable figure was 9,613 million cubic feet.

<sup>10</sup>Excludes gray iron ingot molds produced and consumed in the same establishment.

<sup>11</sup>For 1967, includes cost of manganese ore, aluminum and aluminum-base alloy scrap and dross and dead-burned magnesia. For 1963, includes cost of manganese ore, aluminum and aluminum-base alloy scrap and dross nickel, tin, lead, dead-burned magnesia, gray iron ingot molds, limestone, lime, fluorspar, and other fluxes.

<sup>12</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3312, these small establishments accounted for approximately 0.1 percent of payrolls and 0.1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

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A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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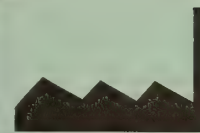
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# 1967 CENSUS OF MANUFACTURES



MC67(P)-33A-2

## INDUSTRY SERIES

**preliminary  
report**

### Electrometallurgical products

SIC Code 3313

The Electrometallurgical Products Industry includes establishments primarily engaged in manufacturing ferro and nonferrous additive alloys by electrometallurgical or metallothermic processes, including high percentage ferroalloys and high percentage nonferrous additive alloys.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Electrometallurgical Products Industry amounted to \$468.2 million, an increase of 23 percent compared with 1963. Value added by manufacture at \$191.2 million in 1967 was 30

percent more than value added in 1963. Average employment in the industry showed no change from 1963 at a total of 10.4 thousand employees in 1967.

Total value of shipments and other receipts of establishments classified as electrometallurgical products was \$468.2 million. The industry shipments of primary products represented 85-90 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was also 85-90 percent in 1963.

The total value of electrometallurgical products shipped by all producers in 1967 was \$470.2 million of which \$385.5 million, or 82 percent,

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3313.--ELECTROMETALLURGICAL PRODUCTS														
1967 Census . . .	35	32	10.4	78.9	8.5	17.2	58.7	191.2	299.0	468.2	29.3	113.8	85-90	82
1966 ASM <sup>1</sup> . . . . .	(NA)	(NA)	10.3	75.5	8.3	17.0	56.0	197.8	303.5	509.3	23.6	105.4	(NA)	(NA)
1965 ASM <sup>1</sup> . . . . .	(NA)	(NA)	10.9	76.7	9.0	18.5	59.3	216.8	272.4	479.0	20.7	95.9	(NA)	(NA)
1964 ASM <sup>1</sup> . . . . .	(NA)	(NA)	11.0	76.4	9.0	18.7	59.0	150.8	269.3	437.3	17.6	76.0	(NA)	(NA)
1963 Census . . . . .	36	30	10.4	68.9	8.2	16.6	50.8	145.5	228.0	382.1	13.4	93.9	85-90	77
1962 ASM <sup>1</sup> . . . . .	(NA)	(NA)	11.0	72.4	8.3	17.5	51.5	160.9	231.5	386.4	15.9	109.9	(NA)	(NA)
1961 ASM <sup>1</sup> . . . . .	(NA)	(NA)	11.1	70.3	8.4	17.0	49.0	146.9	231.6	399.6	9.0	100.3	(NA)	(NA)
1960 ASM <sup>1</sup> . . . . .	(NA)	(NA)	12.5	76.1	9.3	18.4	52.5	145.3	242.4	380.7	17.2	126.0	(NA)	(NA)
1959 ASM <sup>1</sup> . . . . .	(NA)	(NA)	13.3	80.1	10.1	20.4	56.0	184.6	266.1	456.8	14.3	125.1	(NA)	(NA)
1958 Census <sup>2</sup> . . .	37	35	12.7	71.9	9.3	19.0	49.0	178.9	221.5	399.1	17.0	130.8	91	76

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued December 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**

were shipped by plants classified in industry 3313, Electrometallurgical Products, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 77 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1,

2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more (number)	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
	INDUSTRY 3313.--ELECTROMETALLUGICAL PRODUCTS												
United States, total.....	35	32	10.4	78.9	8.5	17.2	58.7	191.2	299.0	468.2	29.3	10.4	145.5
North Central.....	13	12	4.4	34.6	3.6	7.1	25.0	88.2	117.4	199.6	(D)	4.3	65.7
Ohio.....	9	8	3.8	29.6	3.1	6.0	21.4	73.7	97.9	165.9	(D)	3.7	52.6
South.....	10	10	3.7	27.9	3.1	6.5	21.8	59.6	110.2	153.6	(D)	3.8	49.4
East South Central..	5	5	1.8	13.6	1.5	3.3	11.3	33.2	56.4	78.1	2.8	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Shipments including interplant transfers						Produced and consumed in the same plant in the manufacture of other products	
			Production	Total shipments		Shipments to other companies		Transfers to other plants of the same company		
				Quantity	Value (million dollars)	Quantity	Value (million dollars)	Quantity		Value (million dollars)
1967										
3313- -- 33121 pt.	ELECTROMETALLURGICAL PRODUCTS, TOTAL.....	1,000 Short tons (gross alloy wt.)	( <sup>1</sup> )	(X)	470.2	(D)	(D)	(D)	(D)	( <sup>1</sup> )
33121 pt.	Made in blast furnaces (industry 3312).....	...do....	( <sup>1</sup> )	(X)	62.7	(D)	(D)	(D)	(D)	( <sup>1</sup> )
3313- --	Made in electric and other furnaces (industry 3313 and other industries).....	...do....	( <sup>1</sup> )	(X)	405.5	(D)	(D)	(D)	(D)	( <sup>1</sup> )
33132 11	Ferrochrome.....	...do....	( <sup>1</sup> )	361.4	104.5	(D)	(D)	(D)	(D)	( <sup>1</sup> )
33133 11	Ferrosilicon.....	...do....	( <sup>1</sup> )	573.9	102.9	(D)	(D)	(D)	(D)	( <sup>1</sup> )
33121 85 33131 11 33121 pt. 33134 --	Ferromanganese.....	...do....	(	1,594.7	321.0	(D)	(D)	(D)	(D)	(
33121 86 33134 11 33121 85	Other ferroalloys.....	...do....								
33131 11 33121 89 33134 98	Silvery iron.....	...do....	(	1,594.7	321.0	(D)	(D)	(D)	(D)	(
	Other ferroalloys, including spiegeleisen and ferromanganese.....	...do....								
33130 00	Electrometallurgical products, n.s.k. (For establishments with 10 or more employees. See Note.).....	...do....	( <sup>1</sup> )	(X)	1.9	(X)	(NA)	(X)	(NA)	( <sup>1</sup> )
33130 02	Electrometallurgical products, n.s.k. (For establishments with fewer than 10 employees. See Note.).....	...do....	( <sup>1</sup> )	(X)	0.1	(X)	(NA)	(X)	(NA)	( <sup>1</sup> )
1963										
3313- -- 33131 pt.	ELECTROMETALLURGICAL PRODUCTS, TOTAL.....	1,000 Short tons (gross alloy wt.)	(X)	(X)	411.6	(D)	(D)	(D)	(D)	(X)
33121 pt.	Made in blast furnaces (industry 3312).....	...do....	642.9	538.6	69.0	(D)	(D)	(D)	(D)	77.5
3313- --	Made in electric and other furnaces (industry 3313 and other industries).....	...do....	(X)	(X)	342.6	(D)	(D)	(D)	(D)	(X)
33132 11	Ferrochrome.....	...do....	309.9	277.7	85.3	238.9	72.4	38.8	12.9	38.2
33133 11	Ferrosilicon.....	...do....	452.7	411.9	78.1	376.3	70.5	35.7	7.6	25.8
33121 85 33131 11 33121 pt. 33134 --	Ferromanganese.....	...do....	1,381.4	1,212.2	246.4	(D)	(D)	(D)	(D)	(D)
33121 86 33134 11 33121 85	Other ferroalloys.....	...do....								
33131 11 33121 89 33134 98	Silvery iron.....	...do....	208.0	209.3	16.0	(D)	(D)	(D)	(D)	(D)
	Other ferroalloys, including spiegeleisen and ferromanganese.....	...do....	1,173.4	1,002.9	230.4	(D)	(D)	(D)	(D)	(D)
33130 00	Electrometallurgical products, n.s.k.....	.....	(X)	(X)	1.8	(X)	1.8	(X)	-	(X)

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

- Represents zero. (D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or from related figures. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Data on production and produced and consumed in the same establishment will be published in the final report for this industry.



TABLE 4. **Materials Consumed, by Kind: 1967 and 1963**

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3313.--ELECTROMETALLURGICAL PRODUCTS					
	Materials, containers and supplies, total.....		(X)	225.1	(X)	175.8
106220	Manganese Ore.....	Gross wt. 1,000 short tons.....	453.9	18.6	452.1	15.9
325501	Clay refractories.....	1,000 short tons	(NA)	1.2	9.2	0.6
329701	Nonclay refractories.....	..do.....			18.2	1.0
	Ferroalloys:					
331312	Ferromanganese.....	..do.....	( <sup>1</sup> )	( <sup>1</sup> )	18.7	1.6
331330	Ferrosilicon.....	..do.....	( <sup>1</sup> )	( <sup>1</sup> )	1.7	0.2
331342	Other ferroalloys.....	..do.....	( <sup>1</sup> )	( <sup>1</sup> )	43.9	8.6
999811	Iron and steel purchased scrap.....	..do.....	622.2	19.8	379.5	9.7
970099	All other materials, parts and supplies.....		(X)	<sup>1</sup> 145.7	(X)	135.3
976000	Materials, parts, and supplies n.s.k. <sup>2</sup> .....		(X)	39.8	(X)	3.0

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Included with material code 970099, "All other materials, parts, and supplies," to avoid disclosing figures for individual companies.<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3313, these small establishments accounted for approximately 0.1 percent of payrolls and 0.1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

**U.S. DEPARTMENT OF COMMERCE**  
**Bureau of the Census**  
Washington, D.C. 20233

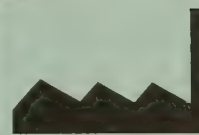
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OFFICIAL BUSINESS





# 1967 CENSUS OF MANUFACTURES



MC67(P)-33A-3

## INDUSTRY SERIES

### Steel wire and related products

SIC Code 3315

**preliminary  
report**

The Steel Wire Drawing and Steel Nails and Spikes Industry includes establishments primarily engaged in drawing wire from purchased iron or steel rods, bars, or wire and which may be engaged in the further manufacture of products made from wire, establishments primarily engaged in manufacturing steel nails and spikes from purchased material are also included in this industry. Rolling mills engaged in the production of ferrous wire from wire rods or hot rolled bars produced in the same establishment are classified in industry 3312. Establishments primarily engaged in drawing nonferrous wire are classified in Group 335.

The classification of establishments for which data are tabulated in this report is based upon the

definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Steel Wire and Related Products Industry amounted to \$842.3 million, an increase of 42 percent compared with 1963. Value added by manufacture at \$385.1 million in 1967 was 52 percent more than value added in 1963. Average employment in the industry showed an increase of 29 percent from 1963 to a total of 27.4 thousand employees in 1967.

Of the \$842.3 million total value of shipments and other receipts of establishments classified as steel wire and related products, \$133.8 million were products primary to other industries; and

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3315.--STEEL WIRE AND RELATED PRODUCTS														
1967 Census....	240	170	27.4	196.3	21.7	44.2	139.4	385.1	465.0	842.3	57.1	161.6	84	35
1966 ASM <sup>1</sup> .....	(NA)	(NA)	25.2	179.4	19.9	42.7	130.0	352.9	448.4	799.6	22.5	147.9	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	24.0	165.8	18.9	39.8	118.7	332.3	422.2	750.3	20.5	148.2	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	22.1	146.9	17.3	35.2	104.3	283.5	370.5	647.1	19.0	112.2	(NA)	(NA)
1963 Census....	200	133	21.3	134.6	16.9	34.4	97.1	253.0	336.7	592.3	14.0	110.4	89	30
1962 ASM <sup>1</sup> .....	(NA)	(NA)	19.8	126.5	15.5	30.8	90.6	224.7	296.1	517.2	14.9	102.7	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	19.8	121.9	15.5	30.7	87.3	221.3	283.0	500.3	12.4	101.8	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	20.6	122.1	16.7	31.9	86.9	218.5	284.7	498.3	12.8	95.4	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	21.0	125.0	16.8	32.6	90.1	234.4	304.2	536.2	11.3	91.8	(NA)	(NA)
1958 Census <sup>2</sup> ...	170	103	19.2	110.2	15.1	29.1	78.4	196.2	260.5	452.1	12.0	90.0	88	26

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued December 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**



\$11.8 million were receipts for miscellaneous activities. The industry shipments of primary products represented 84 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 89 percent in 1963.

The total value of steel wire and related products shipped by all producers in 1967 was \$1,970.1 million of which \$696.7 million, or 35 percent, were shipped by plants classified in industry 3315, Steel Wire and Related Products,

while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 30 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3315, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-33B, Steel Mill Products.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3315.--STEEL WIRE AND RELATED PRODUCTS												
United States, total.....	240	170	27.4	196.3	21.7	44.2	139.4	385.1	465.0	842.3	57.1	21.3	253.0
New England.....	35	27	5.5	40.6	4.3	8.6	29.0	78.4	63.3	141.1	9.7	(D)	(D)
Massachusetts.....	19	15	2.7	20.5	2.1	4.4	15.7	35.8	29.7	65.3	2.4	2.9	28.6
Middle Atlantic.....	62	39	5.7	40.0	4.4	9.0	28.6	76.3	76.4	149.9	26.6	(D)	(D)
New York.....	21	12	1.1	6.1	0.9	1.8	4.3	12.9	10.2	22.9	(D)	1.0	9.4
New Jersey.....	20	12	1.6	11.6	1.2	2.4	8.1	18.6	27.9	45.5	(D)	1.4	19.0
Pennsylvania.....	21	15	3.0	22.3	2.3	4.8	16.2	44.7	38.2	81.5	(D)	(D)	(D)
East North Central....	68	50	10.5	78.3	8.2	16.5	54.8	139.7	215.6	351.7	14.9	8.3	106.2
Ohio.....	17	17	1.8	12.6	1.5	3.3	9.4	34.8	40.6	75.1	6.5	1.5	22.0
Indiana.....	5	5	1.1	8.4	0.8	1.7	5.8	15.6	20.0	35.9	1.0	(D)	(D)
Illinois.....	33	21	5.2	38.7	4.1	7.9	27.6	57.9	123.2	178.6	3.2	4.8	47.5
West North Central....	9	8	1.2	8.0	1.0	2.2	6.1	21.8	13.8	36.0	0.7	0.4	4.2
South Atlantic.....	21	19	1.7	11.1	1.5	3.0	7.9	29.0	36.6	64.8	2.7	0.8	10.8
Maryland.....	7	6	0.7	5.1	0.6	1.3	3.5	13.6	14.9	28.0	1.5	0.4	5.2
East South Central....	7	6	0.9	4.2	0.8	1.5	3.0	8.5	12.0	20.7	0.4	0.6	4.6
West South Central....	11	■	0.5	2.7	0.4	0.9	2.1	6.6	16.1	22.4	0.3	0.2	3.8
West.....	27	13	1.4	11.5	1.1	2.4	8.0	24.9	31.2	55.7	1.8	1.2	13.2
California.....	23	12	1.4	11.0	1.1	2.2	7.7	23.2	29.3	51.9	(D)	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (\$1,000)	Quantity	Value (\$1,000)
3315--	STEEL WIRE AND RELATED PRODUCTS, TOTAL.....		(X)	1,970.1	(X)	1,672.4
33151 --	Noninsulated ferrous wire rope, cable, and strand.....		(X)	222.3	(X)	189.9
34811 --	Made in industries 3312 and 3315.....		(X)	140.5	(X)	100.9
33151 --	Made in fabricated wire products, n.e.c. (industry 3481) and other industries.....		(X)	81.8	(X)	89.0
33151 11	Iron and steel wire rope and cable.....	1,000 short tons.....				
34811 11		.....do.....	249.2	155.2	205.3	141.2
33151 11		Made in industries 3312 and 3315.....	145.8	78.0	105.4	67.8
34811 11	Made in industry 3481 and other industries.....	.....do.....	103.4	77.2	99.9	73.4
33151 21	Composite strand, rope, and cable, including wire strands of different metals (except ACSR).....	.....do.....	24.5	21.4	69.5	28.0
33481 21		.....do.....				
33151 33		Steel wire strand, except wire strand for prestressed concrete, including guard rail cable.....	68.1	25.3		
34811 33	Wire strand for prestressed concrete.....	.....do.....	59.8	17.7	36.2	11.8
33151 35		.....do.....				
33151 00	Noninsulated ferrous wire, rope, cable, and strand, n.s.k....		(X)	2.7	(X)	9.0
34811 00						
33152 --	Steel nails and spikes.....		(X)	158.8	(X)	153.1
33152 11	Steel wire nails, spikes and brads:					
	Bright.....	1,000 short tons.....	240.9	58.1	226.6	54.6
33152 13	Galvanized.....	.....do.....	60.9	17.3	47.9	13.2
33152 17	Cement-coated.....	.....do.....	61.1	12.8	45.1	10.3
33152 19	Other nails, spikes, etc.....	.....do.....	13.8	6.3	30.8	11.5
33152 23	Steel wire staples:.....	.....do.....	64.6	47.0	(NA)	36.6
33152 25	Steel tacks (wire and box).....	.....do.....	8.3	7.2	12.1	8.5
33152 28	Track spikes.....	.....do.....	21.7	4.9	33.5	8.4
33152 32	Steel cut nails, spikes, and brads, including horseshoe nails but excluding track spikes.....	.....do.....	10.0	3.0	11.3	6.5
33152 00	Steel nails and spikes, n.s.k.....		(X)	2.2	(X)	3.3
33155 --	Steel wire: <sup>1</sup>					
33125 --	As reported on annual Form MA-33B.....		(X)	645.6	(X)	587.8
33125 --	As reported in the census of manufactures.....		(X)	678.1	(X)	621.6
33125 --	Made in industry 3312.....		(X)	355.6	(X)	364.0
33155 --	Made in industry 3315 and other industries.....		(X)	322.5	(X)	257.6
33156 --	Fencing and fence gates.....		(X)	130.3	(X)	115.5
34816 --	Made in industries 3312 and 3315.....		(X)	79.5	(X)	58.3
33156 --	Made in fabricated wire products, n.e.c. (industry 3481) and other industries.....		(X)	50.8	(X)	57.2
33156 13	Chain link fencing, excluding post, gates and fittings.....	1,000 short tons.....	(NA)	281.1	(NA)	37.5
34816 13		.....do.....	(NA)	41.4	125.9	38.5
33156 35	Fence gates, posts, and fittings.....	.....do.....	(NA)	(NA)	(NA)	30.2
34816 35		.....do.....	(NA)	(NA)	(NA)	45.7
33156 13, 35	Made in industries 3312 and 3315.....	.....do.....	(NA)	(NA)	(NA)	45.7
34816 13, 35	Made in industry 3481 and other industries.....	.....do.....	(NA)	(NA)	(NA)	45.7
33156 21	Wire fence, woven and welded.....	.....do.....			132.2	33.3
34816 21		.....do.....	( <sup>2</sup> )	( <sup>2</sup> )	109.7	26.3
33156 21		Made in industry 3481 and other industries.....			22.5	7.0
33156 71	Ornamental lawn fence.....	.....do.....	7.7	2.5	11.0	3.5
34816 71		.....do.....	7.2	2.0	5.8	1.8
33156 71		Made in industry 34816 and other industries.....	0.5	0.5	5.2	1.6
33156 00	Fencing and fence gates, n.s.k.....		(X)	5.3	(X)	2.8
34816 00						
33157 --	Ferrous wire cloth and other woven ferrous wire products.....		(X)	88.1	(X)	72.3
34814 --	Made in industries 3312 and 3315.....		(X)	38.4	(X)	24.3
33157 --	Made in fabricated wire products, n.e.c. (industry 3481) and other industries.....		(X)	49.7	(X)	48.0

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (\$1,000)	Quantity	Value (\$1,000)
3315- --	STEEL WIRE AND RELATED PRODUCTS--Continued					
33157 --	Ferrous wire cloth and other woven ferrous wire products--Con. Made in fabricated wire products, n.e.c. (industry 3481) and other industries--Continued					
34814 --						
34814 --						
33157 11	Insect wire screening, steel, including stainless steel.....	Million sq. ft.	145.7	5.9	168.6	7.8
34814 11						
33157 31	Hardware cloth.....	1,000 short tons.....	18.1	12.4	8.6	6.3
34814 31						
33157 61	Industrial wire cloth, steel.....	Million sq. ft.	(NA)	347.6	(NA)	23.7
34814 61		..do.....			(NA)	4.6
33157 61		Made in industries 3312 and 3315.....			25.9	19.1
34814 61	Made in industry 3481 and other industries.....	..do.....				
33157 71	Woven wire netting (poultry, fur farm, stucco, etc.).....	1,000 short tons.....	( <sup>3</sup> )	( <sup>3</sup> )	(NA)	13.6
34814 71						
33157 81	Stainless steel paper machine wire cloth (fourdrinier and cylinder).....	..do.....	(X)	18.2	(X)	20.1
34814 81						
33157 98	Other wire cloth and woven wire products including diamond cloth.....		(X)	4.0	(X)	1.2
34814 98						
33157 00	Wire cloth and woven wire products, n.s.k.....		(X)		(X)	
34814 00						
33159 --	Other fabricated wire products.....		(X)	660.2	(X)	501.5
34819 --			(X)	285.8	(X)	181.6
33159 --			(X)	374.4	(X)	320.0
34819 --	Made in industries 3312 and 3315.....					
33159 --	Made in fabricated wire products, n.e.c. (industry 3481) and other industries.....		(X)		(X)	
34819 --						
34819 --						
33159 41	Wire chain: Tire.....	1,000 short tons.....	44.6	38.6	20.9	14.8
34819 41						
33159 49	Other.....	..do.....	68.0	48.6	61.5	44.7
34819 49						
33159 49	Made in industries 3312 and 3315.....		34.3	22.5	19.7	14.2
34819 49		Made in industry 3481 and other industries.....	33.7	26.1	41.7	30.5
33159 51	Barbed and twisted steel wire.....	..do.....	165.7	34.6	110.6	20.3
34819 51						
33159 55	Wire bale ties.....	..do.....	129.3	25.9	86.9	17.3
34819 55						
33159 55	Made in industries 3312 and 3315.....	..do.....	108.1	20.4	73.2	13.9
34819 55		Made in industry 3481 and other industries.....	21.2	5.5	13.8	3.4
33159 61	Welded steel wire fabric: Concrete reinforcing mesh.....	..do.....	678.8	115.7	542.7	94.2
34819 61						
33159 61	Made in industries 3312 and 3315.....	..do.....	588.7	97.6	435.4	74.2
34819 61		Made in industry 3481 and other industries.....	90.1	18.1	107.3	20.0
33159 65	Other welded steel wire fabric.....	..do.....	200.9	51.7	127.7	31.2
34819 65						
33159 65	Made in industries 3312 and 3315.....	..do.....	183.5	38.3	116.7	27.3
34819 65		Made in industry 3481 and other industries.....	17.4	13.4	11.0	3.9
33159 71	Wire garment hangers.....	Million lbs....	254.1	39.3	161.4	25.6
34819 71						
33159 73	Wire carts, including household, grocery type and industrial..		(X)	19.2	(X)	15.0
34819 73						
33159 75	Steel wire cages.....		(X)	16.1	(X)	9.2
34819 75						
33159 77	Paper clips.....		(X)	3.2		
34819 77						
33159 98	Other wire products including baskets, guards, florists' designs, kitchenware, etc.....		(X)	238.4	(X)	211.3
34819 98						
33159 00	Other fabricated wire products, n.s.k.....		(X)	28.9	(X)	17.9
34819 00						

See footnotes at end of table.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (\$1,000)	Quantity	Value (\$1,000)
3315- --	STEEL WIRE AND RELATED PRODUCTS--Continued					
33150 00	Steel wire drawing, n.s.k. (For establishments primarily with 10 or more employees in 1967. See Note.).....	.....	(X)	31.2		
33150 02	Steel wire drawing, n.s.k. (For establishments principally with less than 10 employees in 1967. See Note.).....	.....	(X)	1.1	(X)	20.7

<sup>e</sup>From 10 to 30 percent of this figure was estimated. (NA) Not available. n.e.c. Not elsewhere classified. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Excludes shipments of steel processed on a conversion basis for nonsteel producing companies. Detailed data by shape and grade and net shipments figures appear in Current Industrial Reports Series MA-33B "Steel Mill Products" for 1967.

<sup>2</sup>Wire fence, woven and welded has been combined with chain link fencing pending further review of data.

<sup>3</sup>Woven wire netting has been combined with steel industrial wire cloth pending further review of data.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	1967		1963	
		Quantity (1,000 short tons)	Delivered cost (million dollars)	Quantity (1,000 short tons)	Delivered cost (million dollars)
	MATERIALS, CONTAINERS, SUPPLIES, TOTAL.....	(X)	422.6	(X)	313.6
	Nonferrous metals, alloys and ferroalloys:				
333113	Copper, including both refined unalloyed and copper-base alloy raw material.....	2.0	2.3	0.6	0.5
333975	Tin.....	(NA)	0.9	0.4	0.5
333232	Lead.....	3.5	1.0	2.1	0.5
333348	Zinc.....	15.1	4.3	8.2	1.6
281930	Sulfuric acid (100 percent H <sub>2</sub> SO <sub>4</sub> ).....	(NA)	0.6	24.3	1.4
	Steel for drawing wire:				
	Rods:				
331061	Carbon steel.....	1,308.5	193.4	966.7	143.7
331063	Alloy steel (except stainless).....	31.2	8.4	41.7	11.6
331065	Stainless steel.....	15.2	15.5	9.0	9.7
	Wire for redrawing:				
331073	Carbon steel.....	80.2	18.9	82.3	25.9
331075	Alloy steel.....	(NA)	0.5	2.8	2.7
331077	Stainless steel.....	0.6	1.1	1.0	1.5
331079	Other steel mill shapes for drawing wire.....	4.6	1.7	6.8	1.2
331005	Ingots, semifinished shapes (blooms, billets etc.) and other steel shapes received for further process, except for drawing wire.....	(X)	14.1	(X)	28.7
970099	All other materials and components, parts, containers and supplies consumed.....	(X)	122.6	(X)	58.1
976000	Materials, n.s.k. <sup>1</sup> .....	(X)	37.3	(X)	26.0

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3315, these small establishments accounted for approximately 0.1 percent of payrolls and 0.1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products**--In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture**--This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment**--For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories**--Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

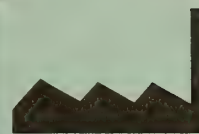
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**Bureau of the Census**  
Washington, D.C. 20233

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OFFICIAL BUSINESS



# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

### Cold finishing of steel shapes

SIC Code 3316

## preliminary report

The Cold Rolled Steel Sheet, Strip, and Bars Industry includes establishments primarily engaged in (1) cold rolling steel sheets and strip from purchased hot rolled sheets; (2) cold drawing steel bars and steel shapes from purchased hot rolled steel bars; and (3) producing other cold finished steel. Establishments primarily engaged in the production of steel, including hot rolled steel sheets, and further cold rolling such sheets are included in industry 3312, Blast Furnaces and Steel Mills.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Cold Finishing of Steel Shapes Industry amounted to \$1,013.1 million, an increase of 35 percent compared with 1963. Value added by manufacture at \$253.6 million in 1967 was 13 percent more than value added in 1963. Average employment in the industry showed an increase of 34 percent from 1963 to a total of 18.3 thousand employees in 1967.

Of the \$1,013.1 million total value of shipments and other receipts of establishments classified as cold finishing of steel shapes, \$144.2 million were products primary to other industries; and \$16.8 million were receipts for miscellaneous

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total	With 20 employees or more (number)	Number	Payroll (million dollars)	Number	Man-hours (millions)	Wages (million dollars)							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)							
INDUSTRY 3316.--COLD FINISHING OF STEEL SHAPES														
1967 Census....	106	85	18.3	145.8	14.0	28.0	102.3	253.6	767.4	1,013.1	30.8	183.1	86	22
1966 ASM <sup>1</sup> .....	(NA)	(NA)	17.0	135.7	13.3	28.1	99.1	306.6	673.8	975.7	22.5	142.1	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	16.0	124.4	12.5	26.4	92.7	285.7	634.7	917.7	20.8	138.4	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	14.2	108.3	10.9	23.7	79.3	222.8	583.0	798.1	11.8	130.0	(NA)	(NA)
1963 Census....	81	68	13.7	99.6	10.6	21.8	71.5	224.0	530.0	751.6	14.9	109.4	94	20
1962 ASM <sup>1</sup> .....	(NA)	(NA)	12.0	87.5	9.3	19.3	65.8	194.2	495.8	690.2	*14.0	108.3	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	11.4	79.6	8.8	17.7	58.4	158.1	439.8	597.6	12.8	112.5	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	12.4	83.2	9.8	19.3	62.2	173.5	472.2	634.9	*13.1	96.8	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	12.1	82.2	9.4	18.6	58.6	191.2	451.6	645.6	10.2	82.4	(NA)	(NA)
1958 Census <sup>2</sup> ...	78	63	10.9	67.1	8.5	16.0	47.2	141.5	338.5	477.8	25.7	91.3	95	18

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 3 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued December 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

Harold C. Passer, Assistant Secretary for Economic Affairs

BUREAU OF THE CENSUS George Hay Brown, Director

activities. The industry shipments of primary products represented 86 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 94 percent in 1963.

The total value of cold finished steel shapes shipped by all producers in 1967 was \$3,845.8 million of which \$852.1 million, or 22 percent, were shipped by plants classified in industry 3316,

Cold Finishing of Steel Shapes, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 20 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

#### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3316, the Census Bureau collects current statistics on products. These data appear in the Current Industrial Reports series:

MA-33B, Steel Mill Products.



TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employ-ees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3316.--COLD FINISHING OF STEEL SHAPES													
United States, total.....	106	85	18.3	145.8	14.0	28.0	102.3	253.6	767.4	1,013.1	30.8	13.7	224.0
Middle Atlantic:													
New York.....	5	3	1.2	9.9	1.0	2.2	8.2	18.4	28.4	46.4	0.5	1.3	38.2
New Jersey.....	6	5	0.9	6.8	0.6	1.2	4.2	12.4	18.9	32.3	0.9	0.5	8.0
East North Central....	48	39	9.7	78.3	7.3	14.5	53.9	143.7	461.7	602.7	(D)	5.6	88.6
Ohio.....	19	17	4.9	38.0	3.8	7.2	27.5	82.9	157.5	239.8	7.0	2.2	28.5
Illinois.....	7	4	1.0	8.2	0.8	1.5	5.2	9.7	49.6	58.3	(D)	(D)	(D)
Michigan.....	16	13	2.6	21.9	1.9	3.9	14.1	30.0	192.5	222.6	5.0	1.5	27.5
South.....	7	5	0.4	2.8	0.3	0.6	1.8	5.8	14.5	20.3	(D)	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000 short tons)	Value (\$1,000)	Quantity (1,000 short tons)	Value (\$1,000)
3316- --	COLD FINISHING OF STEEL SHAPES, TOTAL.....	(X)	3,845.8	(X)	3,349.2
33127 --	Cold rolled steel sheet and strip:				
33167 --					
33127 --					
33127 --	As reported in Census of Manufactures.....	(X)	3,225.6	(X)	2,872.9
33167 --	Made in steel works (Industry 3312).....	(X)	2,495.3	(X)	2,464.4
33167 --	Made in cold rolling mills (Industry 3316 and other industries).....	(X)	730.3	(X)	408.5
	As reported on Form MA-33B <sup>1</sup> .....	17,172.1	2,985.9	16,606.9	2,781.7
	Carbon steel:				
33167 11	Cold rolled sheet.....	15,196.3	2,157.8	14,943.0	2,081.5
33167 15	Cold rolled strip.....	1,369.3	314.1	1,187.7	273.7
	Alloy steel:				
33167 31	Cold rolled sheet.....	108.0	34.9	64.2	15.0
33167 35	Cold rolled strip.....	35.4	40.5	24.1	22.9
	Stainless steel:				
33167 51	Cold rolled sheet.....	186.7	183.9	151.6	154.7
33167 55	Cold rolled strip.....	276.4	254.7	236.3	233.9
33128 --	Cold finished steel bars (except concrete reinforcing):				
33168 --					
33128 --					
33128 --	As reported in the Census of Manufactures.....	(X)	605.2	(X)	472.8
33168 --	Made in steel works (Industry 3312).....	(X)	211.1	(X)	199.4
33168 --	Made in cold finishing mills (Industry 3316 and other industries).....	(X)	394.1	(X)	273.4
	As reported on Form MA-33B <sup>1</sup> .....	1,930.8	613.4	1,613.2	476.1
33168 11	Carbon steel.....	1,598.3	385.0	1,326.6	302.1
33168 31	Alloy steel.....	229.5	86.8	212.6	74.2
33168 51	Stainless steel.....	103.0	141.6	74.0	99.8
33160 00	Cold finished sheet, strip and bars, n.s.k.(For establishments with 10 or more employees. See Note.).....	(X)	14.6	(X)	3.5
33160 02	Cold finished sheet, strip and bars, n.s.k.(For establishments with fewer than 10 employees. See Note.).....	(X)	0.4		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Data on receipts, production and quantities consumed in producing plants as well as separate commercial and interplant transfers are published in Current Industrial Reports Series MA-33B, Steel Mill Products.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(Not applicable to this report)

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

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This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3316, these small establishments accounted for approximately 0.4 percent of payrolls and 0.4 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

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# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--** All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

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The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

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In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

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the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

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These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-33A-5

## INDUSTRY SERIES

### Steel pipe and tubes

SIC Code 3317

**preliminary  
report**

The Steel Pipe and Tubes Industry includes establishments primarily engaged in the production of welded or seamless steel pipe and tubes and heavy riveted steel pipe from purchased materials. Establishments primarily engaged in the production of steel, including steel skelp, or steel blanks, tube rounds, or pierced billets are classified in industry 3312. Establishments producing welded or seamless steel pipe and tube and heavy-riveted steel pipe from material produced in the same establishments are also classified in industry 3312.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Steel Pipe and Tubes Industry amounted to \$1,148.3 million, an increase of 42 percent compared with 1963. Value added by manufacture at \$412.1 million in 1967 was 40 percent more than value added in 1963. Average employment in the industry showed an increase of 18 percent from 1963 to a total of 27.0 thousand employees in 1967.

Of the \$1,148.3 million total value of shipments and other receipts of establishments classified as steel pipe and tubes, \$136.3 million were products primary to other industries; and \$31.8 million were receipts for miscellaneous activities. The industry shipments of primary

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
	INDUSTRY 3317.--STEEL PIPE AND TUBES													
1967 Census....	151	126	27.0	207.6	21.8	45.0	155.3	412.1	754.0	1,148.3	37.7	204.6	88	40
1966 ASM <sup>1</sup> .....	(NA)	(NA)	26.0	194.7	20.9	44.7	144.4	416.5	668.6	1,072.3	28.0	180.8	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	24.7	175.2	19.6	41.4	129.3	379.8	612.4	976.3	26.3	165.9	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	23.4	164.6	18.7	39.9	121.4	293.2	580.7	903.3	*31.5	145.1	(NA)	(NA)
1963 Census....	141	115	22.9	153.1	18.3	37.9	113.7	295.2	517.3	809.0	23.6	152.0	91	37
1962 ASM <sup>1</sup> .....	(NA)	(NA)	25.0	163.5	19.5	39.0	116.2	311.1	582.4	907.5	26.0	179.5	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	24.8	156.4	19.6	38.6	112.4	290.3	548.4	825.6	*25.8	183.1	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	26.2	160.0	20.9	40.6	114.7	322.2	588.4	886.9	22.3	164.3	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	25.6	161.8	20.4	40.8	117.1	366.4	625.8	981.5	18.4	143.5	(NA)	(NA)
1958 Census <sup>2</sup> ....	136	101	23.9	138.1	19.4	38.0	103.8	284.1	496.1	780.7	15.1	136.9	92	40

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued November 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**

products represented 88 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 91 percent in 1963.

The total value of steel pipe and tubes shipped by all producers in 1967 was \$2,437.3 million of which \$980.2 million, or 40 percent, were shipped by plants classified in industry 3317, Steel Pipe and Tubes, while the remainder was shipped by

plants classified in other industries. This percent, called the coverage ratio, was 37 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3317, the Census Bureau collects current statistics on products. These data appear in the Current Industrial Reports series:

MA33B, Steel Mill Products.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3317.--STEEL PIPE AND TUBES												
United States, total.....	151	126	27.0	207.6	21.8	45.0	155.3	412.1	754.0	1,148.3	37.7	22.9	295.2
Northeast.....	44	41	6.9	51.2	5.5	11.2	36.6	107.1	145.7	252.0	10.0	8.0	103.8
New Jersey.....	8	7	0.9	7.3	0.7	1.4	4.3	15.4	21.4	36.2	(D)	(D)	(D)
Pennsylvania.....	29	27	5.4	39.7	4.4	8.9	29.3	83.3	113.6	196.7	6.5	6.6	88.2
North Central.....	55	44	10.9	85.6	8.7	17.7	63.3	161.3	286.2	451.9	17.3	10.7	139.0
Ohio.....	18	14	5.0	37.0	4.0	8.1	27.9	69.9	146.5	218.7	4.4	5.2	66.4
Michigan.....	13	10	1.8	15.6	1.5	3.2	11.7	32.2	33.1	65.4	2.4	2.4	34.6
South.....	25	23	4.7	30.7	3.8	7.6	23.0	59.5	121.7	181.9	4.7	2.2	(D)
Colorado.....	3	3	0.2	1.2	0.2	0.4	0.9	2.8	8.7	11.4	(D)	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

**TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963**

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000 short tons)	Value (million dollars)	Quantity (1,000 short tons)	Value (million dollars)
3317- --	STEEL PIPE AND TUBES, TOTAL.....	(X)	2,437.3	(X)	1,887.5
	As reported in the census of manufactures:				
33126 --	Made in steelworks (Industry 3312).....	(X)	1,266.7	(X)	1,137.5
33176 --	Made in steel pipe and tubes (Industry 3317) and other industries.....	(X)	1,170.6	(X)	750.0
	As reported on annual form MA-33B.....	(X)	2,440.5	(X)	1,797.0
	Detailed data by grade and shape form MA-33B:				
	Carbon steel pipes and tubes:				
33176 11	Standard pipe.....	2,836.8	521.4	2,341.8	422.6
33176 12	Line pipe.....	2,327.3	428.6	1,930.1	334.6
33176 13	Oil country goods.....	1,007.0	243.6	1,176.1	252.5
33176 19	Miscellaneous.....	206.1	35.7	238.6	49.3
	Pressure tubing:				
33176 21	Seamless.....	101.9	44.5	222.2	93.2
33176 22	Welded.....	124.2	63.9		
	Mechanical tubing:				
33176 23	Seamless.....	403.4	130.8	878.9	252.2
33176 24	Welded.....	953.0	258.8		
	Alloy steel pipes and tubes:				
33176 33	Oil country goods.....	341.3	101.7	300.6	81.0
33176 41 and 42	Pressure tubing, seamless and welded.....	61.5	43.1	38.5	23.0
33176 43 and 44	Mechanical tubing, seamless and welded.....	475.4	210.3	360.9	164.3
33176 31, 32, 39	Standard line, and miscellaneous.....	844.2	199.5	125.6	28.5
	Stainless steel pipes and tubes:				
	Pressure tubing:				
33176 61	Seamless.....	14.6	38.9	20.5	48.2
33176 62	Welded.....	32.0	63.2		
	Mechanical tubing:				
33176 63	Seamless.....	7.1	24.9	13.3	47.5
33176 64	Welded.....	14.2	31.7		

Note: Data on receipts, production, products consumed in producing plants, separate commercial and interplant transfers are published in Current Industrial Reports Series MA-33B, Steel Mill Products for 1967.

(X) Not applicable.

**TABLE 4. Materials Consumed, by Kind: 1967 and 1963**

(Not applicable to this report)



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the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# CURRENT INDUSTRIAL REPORTS

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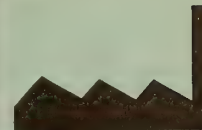
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OFFICIAL BUSINESS



# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

**preliminary  
report**

### Gray iron foundries

SIC Code 3321

Gray Iron Foundries include establishments primarily engaged in manufacturing gray iron castings, including cast iron pressure and soil pipes and fittings.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified as Gray Iron Foundries amounted to \$2,695.2 million, an increase of 36 percent compared with 1963. Value added by manufacture at \$1,579.1

million in 1967 was 35 percent more than value added in 1963. Average employment in the industry showed an increase of 16 percent from 1963 to a total of 140.1 thousand employees in 1967.

Of the \$2,695.2 million total value of shipments and other receipts of establishments classified as Gray Iron Foundries, \$210 million were products primary to other industries; and \$88 million were receipts for miscellaneous activities. The industry shipments of primary products represented 92 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 93 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
	INDUSTRY 3321.-GRAY IRON FOUNDRIES													
1967 Census....	1,063	775	140.1	983.4	121.6	246.2	795.8	1,579.1	1,096.8	2,695.2	196.9	241.6	92	89
1966 ASM <sup>1</sup> .....	(NA)	(NA)	140.7	978.3	122.1	259.7	803.0	1,646.4	1,096.9	2,728.2	221.3	262.7	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	134.9	921.8	117.1	253.0	760.4	1,559.3	1,057.7	2,602.6	171.5	239.7	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	126.3	825.2	109.8	235.6	679.9	1,353.8	953.9	2,286.2	75.9	220.8	(NA)	(NA)
1963 Census....	1,139	767	120.5	730.3	104.2	214.3	596.1	1,168.5	813.6	1,984.9	64.8	192.5	93	88
1962 ASM <sup>1</sup> .....	(NA)	(NA)	119.2	675.4	102.8	204.1	543.2	1,076.1	767.9	1,836.2	60.5	185.9	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	113.7	602.3	97.5	183.9	481.7	924.0	702.3	1,622.7	52.3	174.5	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	121.5	627.5	104.3	199.7	503.6	968.4	751.8	1,718.8	53.2	178.1	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	125.9	644.4	109.1	217.2	525.5	1,002.9	806.5	1,803.0	34.1	180.7	(NA)	(NA)
1958 Census <sup>2</sup> ...	1,310	848	112.7	531.2	96.4	178.0	418.9	810.8	622.7	1,434.7	32.6	159.8	95	87

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued September 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary  
Rocco C. Siciliano, Under Secretary  
**BUREAU OF THE CENSUS**



The total value of gray iron castings shipped by all producers in 1967 was \$2,702.5 million of which \$2,397 million, or 89 percent, were shipped by plants classified in industry 3321, Gray Iron Foundries, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 88 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

#### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3321, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

##### M33A Iron and Steel Castings

The data published in this series are not strictly comparable to the data published in this report in that no figures are included in this report for castings produced by captive foundry departments of establishments classified in other industries.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967										1963		
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3321.-GRAY IRON FOUNDRIES													
United States, total.....	1,063	775	140.1	983.4	121.6	246.2	795.8	1,579.1	1,096.8	2,695.2	196.9	120.5	1,168.5
New England.....	79	56	5.6	36.9	4.9	10.1	29.8	52.9	27.7	80.3	2.5	4.9	41.9
New Hampshire.....	4	2	0.1	0.5	0.1	0.2	0.5	0.8	0.3	1.1	(2)	(b)	(b)
Massachusetts.....	43	31	2.9	18.2	2.6	5.2	15.5	27.1	12.9	39.9	1.2	2.7	23.5
Connecticut.....	14	13	1.8	14.1	1.5	3.5	10.6	19.0	11.3	30.2	1.1	1.5	12.8
Middle Atlantic.....	177	128	15.7	102.5	13.5	27.4	82.6	180.5	134.7	313.4	14.0	14.9	140.0
New York.....	46	31	3.5	23.0	3.0	6.3	18.4	39.5	28.8	68.2	1.6	3.1	26.2
New Jersey.....	31	25	4.2	27.8	3.6	7.3	22.5	54.8	42.1	96.2	3.8	4.1	41.4
Pennsylvania.....	100	72	8.0	51.8	7.0	13.7	41.7	86.2	63.8	148.9	8.7	7.7	72.4
East North Central...	386	312	74.8	579.7	64.2	130.6	468.3	915.2	568.3	1,496.1	151.3	62.3	657.7
Ohio.....	104	84	19.6	150.4	16.9	33.8	121.6	254.3	155.9	411.7	18.2	16.8	194.1
Indiana.....	61	49	10.0	71.9	8.6	17.5	58.0	115.7	61.1	177.8	6.0	7.6	72.8
Illinois.....	73	54	9.3	71.4	8.0	16.0	57.0	127.0	76.8	204.1	45.9	6.9	61.9
Michigan.....	94	80	27.4	224.4	23.4	48.8	182.2	317.7	221.3	548.8	70.5	22.6	260.7
Wisconsin.....	54	45	8.5	61.6	7.3	14.6	49.5	100.5	53.1	153.7	10.7	8.4	68.1
West North Central...	89	57	5.8	35.3	5.3	9.7	27.5	54.6	35.1	89.9	3.9	5.6	45.9
Minnesota.....	25	14	1.0	7.0	0.8	1.7	5.2	10.8	7.6	18.3	0.7	0.8	8.3
South Atlantic.....	82	53	8.6	51.0	7.7	16.3	43.2	95.1	65.2	160.2	4.7	7.2	65.4
East South Central...	76	62	16.0	96.0	14.0	28.4	78.8	137.1	169.0	313.3	10.4	14.5	110.4
West South Central...	63	39	6.3	33.2	5.5	11.2	26.5	61.6	41.4	102.1	4.3	5.0	38.0
Texas.....	39	24	5.2	27.7	4.5	9.3	22.0	52.8	37.5	89.6	3.6	4.1	32.5
West.....	108	65	6.7	44.2	5.8	11.2	35.3	71.3	50.5	124.6	5.6	6.2	69.2
Washington.....	14	5	0.7	4.3	0.6	1.2	3.7	6.8	2.5	9.2	0.1	(b)	(b)
California.....	64	45	4.4	28.5	3.8	7.3	22.7	46.3	35.3	83.5	2.5	4.3	46.4

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	1967						1963					
		Total shipments, including interplant transfers		Shipments to other companies		Transfers to other plants of the same company		Total shipments, including interplant transfers		Shipments to other companies		Transfers to other plants of the same company	
		Quantity (1,000 short tons)	Value (million dollars)	Quantity (1,000 short tons)	Value (million dollars)	Quantity (1,000 short tons)	Value (million dollars)	Quantity (1,000 short tons)	Value (million dollars)	Quantity (1,000 short tons)	Value (million dollars)	Quantity (1,000 short tons)	Value (million dollars)
3321- --	GRAY IRON CASTINGS, TOTAL <sup>1</sup> ....	(X)	2,702.5	(X)	(NA)	(X)	(NA)	(X)	2,046.3	(X)	(NA)	(X)	(NA)
33211 11	Molds and stools for heavy steel ingots.....	2,296.5	221.4	1,410.5	142.6	886.0	78.8	2,128.2	187.8	1,333.2	115.4	795.0	72.3
33212 --	Cast iron pressure pipe and fittings <sup>1</sup> .....	1,791.4	260.6	1,791.4	260.6	(X)	(X)	1,750.6	230.7	<sup>2</sup> 1,750.6	<sup>2</sup> 230.7	( <sup>2</sup> )	( <sup>2</sup> )
33212 21	6 inches and under (inside diameter).....	514.9	74.4	514.9	74.4	(X)	(X)	594.4	80.3	<sup>2</sup> 594.4	<sup>2</sup> 80.3	( <sup>2</sup> )	( <sup>2</sup> )
33212 23	Over 6 inches up to and including 8 inches (inside diameter).....	379.9	51.8	379.9	51.8	(X)	(X)	408.9	54.8	<sup>2</sup> 408.9	<sup>2</sup> 54.8	( <sup>2</sup> )	( <sup>2</sup> )
33212 25	Over 8 inches up to but not including 14 inches (inside diameter).....	523.0	70.4	523.0	70.4	(X)	(X)	449.4	56.2	<sup>2</sup> 449.4	<sup>2</sup> 56.2	( <sup>2</sup> )	( <sup>2</sup> )
33212 31	14 inches to 24 inches inclusive (inside diameter).....	373.6	64.0	373.6	64.0	(X)	(X)	297.9	39.3	<sup>2</sup> 297.9	<sup>2</sup> 39.3	( <sup>2</sup> )	( <sup>2</sup> )
33212 51	Over 24 inches (inside diameter).....												
33213 --	Cast iron soil pipe and fittings. Cast iron soil pipe and fittings, including special fittings:	926.7	153.9	926.7	153.9	(X)	(X)	953.1	152.1	<sup>2</sup> 953.1	<sup>2</sup> 152.1	( <sup>2</sup> )	( <sup>2</sup> )
33213 21	Up to 3 inches (inside diameter).....	268.6	46.9	268.6	46.9	(X)	(X)	234.3	42.3	<sup>2</sup> 234.3	<sup>2</sup> 42.3	( <sup>2</sup> )	( <sup>2</sup> )
33213 31	Over 3 inches up to but not including 5 inches (inside diameter).....	515.1	80.2	515.1	80.2	(X)	(X)	564.4	84.0	<sup>2</sup> 564.4	<sup>2</sup> 84.0	( <sup>2</sup> )	( <sup>2</sup> )
33213 41	5 inches and over (inside diameter).....	143.0	26.8	143.0	26.8	(X)	(X)	154.4	25.8	<sup>2</sup> 154.4	<sup>2</sup> 25.8	( <sup>2</sup> )	( <sup>2</sup> )
33214 --	All other gray iron castings.....	6,376.2	1,951.8	4,289.0	1,381.4	2,087.2	570.4	5,053.0	1,432.8	3,134.3	981.4	1,738.7	451.4
33214 31	Rolls for rolling mills.....	130.8	75.7	121.2	69.2	9.6	6.5	102.9	61.9	84.5	52.6	18.4	9.3
33214 98	All other gray iron castings...	6,245.4	1,876.1	4,167.8	1,312.2	2,077.6	563.9	4,950.1	1,370.9	3,229.8	928.8	1,720.3	442.0
33210 00	Gray iron castings, n.s.k. (For companies with 10 or more employees. See Note).....	(X)	107.8	(X)	114.8	-	-	(X)	43.0	(X)	43.0	-	-
33210 02	Gray iron castings, n.s.k. (For companies with less than 10 employees. See Note).....	(X)	7.0	(X)	7.0	-	-						

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

- Represents zero. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Differs from the figures published in Current Industrial Reports Series M33A, Iron and Steel Castings, in that no figures are included above for captive foundry departments of plants classified in other industries. As shown in the Current Industrial Reports, captive production ("for own use"), including both interplant transfers and castings produced and consumed by the same plant for 1967, totaled 6,929 thousand tons. Of this total, only 2,973 thousand tons of transfer to other plants of the same company are included above. The difference between tonnages shown above for "shipments to other companies" and the "for sale" figures in Series M33A are due to differences in classification in the census and monthly survey with regard to such products as machinery parts, etc., and fiscal year reports in the Census.

<sup>2</sup>Figures for transfers to other plants of the same company are included with "shipments to other companies" to avoid disclosing operations of individual companies.



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	1967		1963	
		Quantity (1,000 short tons)	Delivered cost (million dollars)	Quantity (1,000 short tons)	Delivered cost (million dollars)
	INDUSTRY 3321 - GRAY IRON FOUNDRIES				
	Materials, containers, and supplies, total.....	(X)	910.4	(X)	666.6
331051	Pig iron (excluding silvery iron).....	3,368.5	195.1	4,379.4	275.9
	Nonferrous metals, alloys and ferroalloys (ingot, pig, shot, etc.):				
333404	Aluminum, unalloyed.....	(1)	(1)	5.5	2.4
333405	Aluminum-base alloys.....	(1)	(1)	5.6	2.4
333121	Copper, unalloyed (cathodes, ingot, cakes, slabs, etc.).....	(1)	(1)	0.5	0.3
334123	Copper-base alloy raw materials (ingot, billets, shot, waffle, hardeners, etc.)...	4.3	4.2	8.5	4.7
333348	Zinc and zinc-base alloys.....	(1)	(1)	0.2	(Z)
333973	Magnesium and magnesium-base alloys.....	11.5	6.0	9.9	4.9
331312	Ferromanganese.....	(1)	(1)	20.5	3.0
331309	Other ferroalloys, including silvery iron.....	284.7	45.9	249.2	35.6
	Scrap (purchased only):				
999811	Iron and steel.....	6,502.4	214.8	5,116.5	170.2
999808	Aluminum and aluminum-base alloy.....	(1)	(1)	(D)	(D)
999812	Copper and copper-base alloy.....	(1)	(1)	1.2	0.6
144503	Sand.....	331.5	22.6		
325501	Clay Refractories.....	(NA)	6.8		
329701	Nonclay Refractories.....	(NA)	4.2	(X)	128.1
970099	All other materials and components, parts, containers, and supplies consumed (excluding coal and coke).....	(X)	346.1		
976000	Materials, containers, and supplies, n.s.k. <sup>2</sup> .....	(X)	64.7	(X)	38.6

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals. (NA) Not available.  
 n.s.k. Not specified by kind. (X) Not applicable. (Z) Less than 0.1 when rounded.

<sup>1</sup>Included with material code 970099 "All other materials, etc."

<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3321, these small establishments accounted for less than 1 percent of payrolls and of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

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**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

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**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

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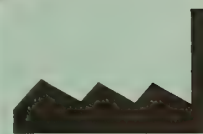
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These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

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# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

### Malleable iron foundries

SIC Code 3322

**preliminary  
report**

Malleable Iron Foundries include establishments primarily engaged in manufacturing malleable iron castings.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified as Malleable Iron Foundries amounted to \$389.9 million, an increase of 23 percent compared with 1963. Value added by manufacture at \$267.2 million in 1967 was 30 percent more than value added in 1963. Average employment in the industry

showed an increase of 7 percent from 1963 to a total of 24 thousand employees in 1967.

Of the \$389.9 million total value of shipments and other receipts of establishments classified as malleable iron foundries, \$23 million were products primary to other industries; and \$3 million were receipts for miscellaneous activities. The industry shipments of primary products represented 94 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 87 percent in 1963.

The total value of malleable castings shipped by all producers in 1967 was \$418.4 million of which \$364 million, or 87 percent, were shipped

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)
INDUSTRY 3322.-MALLEABLE IRON FOUNDRIES														
1967 Census....	82	76	23.9	172.3	20.0	40.3	135.0	267.2	124.1	389.9	21.4	28.5	94	87
1966 ASM <sup>1</sup> .....	(NA)	(NA)	26.4	191.3	22.5	47.1	153.0	294.8	154.8	449.4	30.5	29.4	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	25.1	178.9	21.5	45.7	144.6	279.2	138.5	416.2	21.8	27.8	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	23.7	159.2	20.2	42.5	129.0	218.8	130.3	346.7	19.0	27.9	(NA)	(NA)
1963 Census....	81	71	22.3	142.0	18.8	38.8	112.7	204.6	111.8	317.5	16.3	24.0	87	87
1962 ASM <sup>1</sup> .....	(NA)	(NA)	22.6	136.9	19.1	38.2	108.7	196.0	109.6	304.7	9.0	25.6	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	20.8	118.1	17.3	33.7	91.9	164.5	93.2	257.0	9.8	24.6	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	23.5	125.6	19.7	37.2	98.1	170.3	107.0	279.9	12.8	24.3	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	24.3	135.0	20.8	42.4	108.2	189.1	113.8	299.6	9.6	30.0	(NA)	(NA)
1958 Census <sup>2</sup> ...	82	74	20.2	100.6	16.7	31.4	77.1	127.6	86.8	214.5	4.4	24.9	86	90

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued September 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary  
Rocco C. Siciliano, Under Secretary  
**BUREAU OF THE CENSUS**

by plants classified in industry 3322, Malleable Iron Foundries, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 87 percent in 1963.

1, 2, and 4 may be compared with the product statistics in table 3.

These ratios were developed to measure the extent to which the industry statistics in tables

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3322, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

M33A, Iron and Steel Castings.

The data published in this series are not strictly comparable to the data published in this report in that no figures are included in this report for castings produced by captive foundry departments of establishments classified in other industries.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
	INDUSTRY 3322.--MALLEABLE IRON FOUNDRIES												
United States, total.....	82	76	23.9	172.3	20.0	40.3	135.0	267.2	124.1	389.9	21.4	22.3	204.6
New England.....	6	6	0.9	5.8	0.7	1.5	4.5	9.2	3.6	12.7	0.8	0.8	6.2
Middle Atlantic.....	21	18	4.2	28.2	3.6	7.4	22.7	44.4	20.1	64.3	2.4	3.8	28.6
Pennsylvania.....	10	10	2.8	19.1	2.4	5.0	15.1	31.1	13.9	44.9	1.8	2.5	18.8
East North Central.....	38	37	16.6	124.8	13.8	27.7	97.3	193.7	89.8	282.6	15.3	16.4	158.8
Ohio.....	10	10	3.4	24.5	2.9	5.9	20.8	35.5	17.3	52.6	3.6	3.7	31.6
Illinois.....	9	9	4.0	28.8	3.3	6.6	22.5	38.0	19.0	57.0	4.2	4.3	41.6
Michigan.....	7	6	6.3	51.6	5.0	10.4	38.2	87.5	40.0	127.0	4.9	5.4	62.4
West North Central.....	5	5	0.6	3.9	0.5	1.0	3.0	6.7	2.2	8.9	1.0	0.5	3.9

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	1967						1963					
		Total shipments, including interplant transfers		Shipments to other companies		Transfers to other plants of the same company		Total shipments, including interplant transfers		Shipments to other companies		Transfers to other plants of the same company	
		Quantity (1,000 short tons)	Value (million dollars)	Quantity (1,000 short tons)	Value (million dollars)	Quantity (1,000 short tons)	Value (million dollars)	Quantity (1,000 short tons)	Value (million dollars)	Quantity (1,000 short tons)	Value (million dollars)	Quantity (1,000 short tons)	Value (million dollars)
3322- --	MALLEABLE IRON CASTINGS, TOTAL <sup>1</sup> .....	(X)	418.4	(X)	316.0	(X)	102.4	(X)	313.6	(X)	212.0	(X)	101.6
33220 21	Standard.....	703.2	307.8	690.3	309.9	284.1	102.4	634.1	234.0	538.0	210.8	340.2	101.6
33220 31	Pearlitic.....	271.2	104.5										
33220 00	Malleable iron castings, n.s.k. (For companies with 10 or more employees. See Note).....	(NA)	6.0	(NA)	6.0	-	-	(NA)	1.2	(NA)	1.2	-	-
33220 02	Malleable iron castings, n.s.k. (For companies with less than 10 employees. See Note).....	(NA)	0.1	(NA)	0.1	-	-						

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

- Represents zero. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Differs from the figures published in Current Industrial Reports Series M33-1 Iron and Steel Castings in that no figures are included above for castings produced by captive foundry departments of plants classified in other industries. As shown in the Current Industrial Reports, captive production ("for own use"), including both interplant transfers and castings produced and consumed by the same plant for 1967, totaled 427 thousand tons. Of this total only 284 thousand tons of transfers to other plants of the same company are included above.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	1967		1963	
		Quantity (1,000 short tons)	Delivered cost (million dollars)	Quantity (1,000 short tons)	Delivered cost (million dollars)
	INDUSTRY 3322.--MALLEABLE IRON FOUNDRIES				
	Materials, containers, and supplies, total.....	(X)	91.9	(X)	92.8
331051	Pig iron (excluding silvery iron).....	105.9	6.5	119.0	7.1
	Nonferrous metals, alloys and ferroalloys (ingot, pig, shot etc.):				
333404	Aluminum, unalloyed.....	1.7	0.9	1.1	0.5
333405	Aluminum-base alloys.....				
333121	Copper, unalloyed (cathodes, ingot, cakes, slabs, etc.).....				
334123	Copper-base alloy raw materials (ingot, billets, shot, waffle, hardeners, etc.)...				
333348	Zinc and zinc-base alloys.....	0.8	0.2	0.5	0.1
331312	Ferromanganese.....	6.1	1.1	5.4	0.9
331309	Other ferroalloys, including silvery iron.....	49.5	5.6	94.7	8.7
	Scrap (purchased only):				
999811	Iron and steel.....	608.1	19.8	781.0	24.4
999808	Aluminum and aluminum-base alloy.....	(D)	(D)	(D)	(D)
999812	Copper and copper-base alloy.....	(D)	(D)	(D)	(D)
333973	Magnesium and magnesium-base alloys.....	(D)	(D)		
144503	Sand.....	373.9	2.4	(X)	48.2
325501	Clay refractories.....	28.1	1.6		
329701	Nonclay refractories.....	(NA)	0.7		
970099	All other materials and components, parts, containers, and supplies consumed (excluding coal and coke) <sup>1</sup> .....	(X)	53.0	(X)	2.4
976000	Materials, containers, and supplies, n.s.k. <sup>2</sup> .....	(X)	0.1		

(D) Withheld to avoid disclosing operations of individual companies. (NA) Not available. n.s.k. Not specified by kind.

(X) Not applicable.

<sup>1</sup>Included with product code 970099 "All other materials, etc."

<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3322, these small establishments accounted for less than 1 percent of payrolls and of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

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# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

**Textile mill products • Apparel and leather • Chemicals, rubber, and plastics • Machinery and equipment • Primary metals • Intermediate metal products • Processed foods • Lumber, furniture, and paper products • Stone, clay, and glass products.**

A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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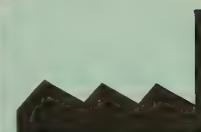
**OFFICIAL BUSINESS**

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# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

### Steel foundries

SIC Code 3323

**preliminary  
report**

Steel Foundries include establishments primarily engaged in manufacturing steel castings.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified as Steel Foundries amounted to \$1,233.1 million, an increase of 42 percent compared with 1963. Value added by manufacture at \$803.5 million in 1967 was 37 percent more than value added in

1963. Average employment in the industry showed an increase of 24 percent from 1963 to a total of 70.5 thousand employees in 1967.

Of the \$1,233.1 million total value of shipments and other receipts of establishments classified as steel foundries, \$131 million were products primary to other industries; and \$18 million were receipts for miscellaneous activities. The industry shipments of primary products represented 89 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 85 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3323.--STEEL FOUNDRIES														
1967 Census . . .	299	249	70.5	497.3	59.3	119.2	387.1	803.5	421.3	1,233.1	60.3	142.4	89	91
1966 ASM <sup>1</sup> . . . . .	(NA)	(NA)	70.8	509.6	59.8	127.0	403.0	855.2	425.4	1,279.0	53.6	149.3	(NA)	(NA)
1965 ASM <sup>1</sup> . . . . .	(NA)	(NA)	65.6	456.1	55.5	116.5	362.2	742.5	389.5	1,116.7	39.4	141.0	(NA)	(NA)
1964 ASM <sup>1</sup> . . . . .	(NA)	(NA)	62.0	418.3	52.6	109.0	329.2	661.6	346.0	987.1	31.4	123.1	(NA)	(NA)
1963 Census . . . . .	267	220	56.8	361.4	47.6	95.1	280.4	586.9	288.8	871.0	27.8	101.5	85	89
1962 ASM <sup>1</sup> . . . . .	(NA)	(NA)	50.5	303.2	45.2	83.8	236.0	484.3	249.7	729.7	23.6	92.2	(NA)	(NA)
1961 ASM <sup>1</sup> . . . . .	(NA)	(NA)	46.8	269.9	41.7	74.4	204.4	410.8	225.0	629.6	22.9	88.6	(NA)	(NA)
1960 ASM <sup>1</sup> . . . . .	(NA)	(NA)	50.8	288.1	45.2	81.8	219.8	439.1	248.7	700.5	19.2	89.2	(NA)	(NA)
1959 ASM <sup>1</sup> . . . . .	(NA)	(NA)	54.0	300.9	51.5	89.0	231.4	489.2	256.7	739.2	25.3	103.4	(NA)	(NA)
1958 Census <sup>2</sup> . . .	256	216	49.1	254.3	40.1	74.4	186.8	383.9	203.7	596.3	22.2	92.7	86	86

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued September 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director

The total value of steel castings shipped by all producers in 1967 was \$1,197.4 million of which \$1,084 million, or 91 percent, were shipped by plants classified in industry 3323, Steel Foundries, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 89 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3323, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

#### M33A "Iron and Steel Castings"

The data published in that series are not strictly comparable to the data published in this report in that no figures are included in this report for castings produced by captive foundry departments of establishments classified in finished product industries.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
	INDUSTRY 3323.--STEEL FOUNDRIES												
United States, total.....	299	249	70.5	497.3	59.3	119.2	387.1	803.5	421.3	1,233.1	60.3	56.8	586.9
New England.....	16	11	2.0	12.5	1.5	3.3	9.1	20.0	7.9	27.8	2.0	1.1	10.1
Middle Atlantic.....	57	45	17.6	128.8	14.6	29.3	99.4	184.0	119.8	308.9	13.1	15.8	156.4
Pennsylvania.....	38	30	13.0	94.6	10.8	21.5	73.0	130.0	89.0	222.7	10.7	11.8	109.9
East North Central....	108	90	32.3	228.9	26.9	54.3	178.6	394.4	182.9	579.2	71.0	26.2	293.4
Ohio.....	30	27	10.6	76.2	8.9	18.2	60.3	124.5	61.1	186.9	9.6	8.6	99.3
Illinois.....	24	21	8.4	60.6	6.9	13.8	46.3	110.9	50.2	159.1	51.5	7.0	85.2
Michigan.....	23	15	4.0	24.3	3.3	6.8	19.0	50.6	28.1	81.1	3.7	2.4	26.6
West North Central....	21	20	5.2	36.7	4.5	9.1	29.7	63.0	31.6	93.9	5.4	3.8	38.8
Missouri.....	11	11	2.5	17.3	2.1	4.4	14.0	31.1	14.8	45.5	0.6	(D)	(D)
East South Central....	9	8	1.6	10.1	1.3	2.7	7.8	15.5	10.1	25.3	0.8	1.0	8.0
Washington.....	12	11	0.9	7.0	0.8	1.5	5.6	11.4	5.8	17.2	0.4	0.6	6.0
Oregon.....	6	6	1.9	14.0	1.5	2.9	10.6	16.6	12.6	32.3	(D)	1.2	12.4

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments, including interplant transfers		Shipments to other companies		Transfers to other plants of the same company	
		Quantity (1,000 short tons)	Value (million dollars)	Quantity (1,000 short tons)	Value (million dollars)	Quantity (1,000 short tons)	Value (million dollars)
		1967					
3323- --	STEEL CASTINGS, TOTAL <sup>1</sup> .....	(X)	1,197.4	(X)	1,140.4	(X)	57.0
33231 --	Steel investment castings, total.....	(X)	164.2	(X)	<sup>2</sup> 164.2	(X)	( <sup>2</sup> )
33231 63	Carbon, including low alloy.....	7.9	80.3	7.9	80.3	( <sup>2</sup> )	( <sup>2</sup> )
33231 65	Alloy, including stainless.....	6.5	81.7	6.5	81.7	( <sup>2</sup> )	( <sup>2</sup> )
33231 00	Steel investment castings, n.s.k.....	(X)	2.2	(X)	2.2	(X)	-
33232 --	Other carbon steel castings, total.....	(X)	619.9	(X)	594.6	(X)	25.3
33232 12	Cast steel railroad car wheels.....	183.6	43.3	183.6	43.3	-	-
33232 13	Railway specialties (except cast railroad car wheels).....	369.4	169.7	366.6	167.7	2.8	2.0
33232 15	Rolls for rolling mills.....	28.8	19.9	28.8	19.9	( <sup>2</sup> )	( <sup>2</sup> )
33232 19	Other carbon steel castings.....	561.1	383.1	528.1	359.8	33.0	23.3
33232 00	Other carbon steel castings, n.s.k.....	(X)	3.9	(X)	3.9	(X)	-
33233 --	Other alloy steel castings, total.....	(X)	384.8	(X)	353.1	(X)	31.7
33233 21	High manganese steel castings.....	61.7	47.7	61.7	47.7	( <sup>2</sup> )	( <sup>2</sup> )
33233 31	High alloy steel castings <sup>3</sup> .....	69.8	117.3	66.3	107.1	3.5	10.2
Alloy steel castings (except high alloy steel castings):							
33233 51	Railway specialties.....	58.3	28.8	58.3	28.8	-	-
33233 55	Rolls for rolling mills.....	53.3	34.0	53.3	34.0	( <sup>2</sup> )	( <sup>2</sup> )
33233 59	Other alloy steel castings.....	162.7	147.2	141.2	125.7	21.5	21.5
33233 00	Other alloy steel castings, n.s.k.....	(X)	9.8	(X)	9.8	(X)	-
33230 00	Steel castings, n.s.k. (Represents companies with 10 employees or more in 1967. See Note.).....	(X)	27.7	(X)	27.7	(X)	-
33230 02	Steel castings, n.s.k. (Represents companies with fewer than 10 employees in 1967. See Note.).....	(X)	0.8	(X)	0.8	(X)	-
		1963					
3323- --	STEEL CASTINGS, TOTAL <sup>1</sup> .....	(X)	815.1	(X)	755.7	(X)	59.3
Carbon steel castings:							
33230 12	Cast steel railroad car wheels.....	253.2	64.7	253.2	64.7	-	-
33230 13	Railway specialties (except cast railroad car wheels).....	188.8	76.7	181.9	73.6	6.9	3.1
33230 15	Rolls for rolling mills.....	26.4	14.8	25.4	14.4	1.0	0.3
33230 19	Other carbon steel castings.....	478.7	286.4	428.1	263.2	50.6	23.3
33230 21	High manganese steel castings.....	63.9	47.3	61.9	46.0	2.0	1.4
33230 31	High alloy steel castings <sup>3</sup> .....	38.5	75.7	33.8	66.9	4.7	8.8
Alloy steel castings (except high alloy steel castings):							
33230 51	Railway specialties.....	62.2	30.6	62.2	30.6	( <sup>2</sup> )	( <sup>2</sup> )
33230 55	Rolls for rolling mills.....	52.1	30.9	40.3	24.5	11.8	6.4
33230 59	Other alloy steel castings.....	161.0	115.9	142.6	99.8	18.4	16.1
33230 61	Investment castings.....	3.6	64.1	3.6	64.1	( <sup>2</sup> )	( <sup>2</sup> )
33230 00	Steel castings, n.s.k. (See Note.).....	(X)	7.9	(X)	7.9	(X)	(X)

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figures is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

- Represents zero. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Differs from the tonnage figures published in Current Industrial Reports Series M33A "Iron and Steel Castings" in that no figures are included above for castings produced by captive foundry departments of plants classified in other industries. As shown in the Current Industrial Report captive production ("for own use") including both interplant transfers and castings produced and consumed by the same plant for 1967 totaled 301 thousand tons of steel castings. Of this total only approximately 70 thousand tons of transfers to other plants of the same company are included above. The differences between the tonnages shown above for "shipments to other companies" and the "for sale" figures in series M33A are due to differences in classification in the census and monthly survey with regard to such products as machinery parts, etc. and fiscal year reports in the census.

<sup>2</sup>Figures for transfers to other plants of the same company are included with "shipments to other companies."

<sup>3</sup>Heat and/or corrosion-resistant steel castings containing 8 percent more of chromium or nickel, or both with or without molybdenum or other elements.



1967 CENSUS OF MANUFACTURES  
TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	1967		1963	
		Quantity (1,000 short tons)	Delivered cost (million dollars)	Quantity (1,000 short tons)	Delivered cost (million dollars)
	INDUSTRY 3323.--STEEL FOUNDRIES				
	Materials, containers and supplies, total.....	(X)	379.7	(X)	235.3
331051	Pig iron (excluding silvery iron).....	129.7	7.9	129.7	8.6
	Nonferrous metals, alloys and ferroalloys (ingot, pig, shot, etc.):				
333404	Aluminum, unalloyed.....	6.0	2.7	1.3	0.6
333405	Aluminum-base alloys.....	( <sup>1</sup> )	( <sup>1</sup> )	0.9	0.4
333121	Copper, unalloyed (cathodes, ingot, cakes, slabs, etc.).....	( <sup>1</sup> )	( <sup>1</sup> )	0.2	0.1
334123	Copper-base alloy raw materials (ingot, billets, shot, waffle, hardeners, etc.)...	( <sup>1</sup> )	( <sup>1</sup> )	1.5	1.0
333973	Magnesium and magnesium-base alloy.....	( <sup>1</sup> )	( <sup>1</sup> )	(D)	(D)
331312	Ferromanganese.....	27.8	4.9	22.4	4.1
331309	Other ferroalloys, including silvery iron.....	57.9	19.9	50.5	15.4
	Scrap (purchased only):				
999811	Iron and steel.....	1,707.0	55.3	1,204.6	38.5
999808	Aluminum and aluminum-base alloy.....	( <sup>1</sup> )	( <sup>1</sup> )	(NA)	0.8
999812	Copper and copper-base alloy.....	( <sup>1</sup> )	( <sup>1</sup> )	0.1	(Z)
144503	Sand.....	1,611.0	14.7		
325501	Clay refractories.....	(NA)	3.7		
329701	Nonclay refractories.....	(NA)	2.9	(X)	155.0
970099	All other materials and components, parts, containers, and supplies consumed (excluding coal and coke).....	(X)	251.0		
976000	Materials, containers and supplies, n.s.k. <sup>2</sup> .....	(X)	16.7	(X)	10.7

(D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or from related figures. (NA) Not available. n.s.k. Not specified by kind.

(X) Not applicable. (Z) Less than 0.1 when rounded.

<sup>1</sup>Data for these items have been included with material code 970099 "All other materials and components."

<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3323, these small establishments accounted for approximately 0 percent of payrolls and 0 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES

MC67(P)-33C-1



## INDUSTRY SERIES

## preliminary report

### Primary copper

SIC Code 3331

The Primary Smelting and Refining of Copper Industry includes establishments primarily engaged in smelting copper from the ore, and in refining copper by electrolytic or other processes. Establishments primarily engaged in rolling, drawing, or extruding copper are classified in industry 3351.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Primary Copper Industry amounted to \$1,127.3 million, a decrease of 9 percent compared with 1963. Value added by manufacture at \$296.9 million in 1967 was 4 percent more than value

added in 1963. Average employment in the industry showed a decrease of 21 percent from 1963 to a total of 11.7 thousand employees in 1967.

Of the \$1,127.3 million total value of shipments and other receipts of establishments classified as primary copper, \$78.4 million were products primary to other industries; and \$86.5 million were receipts for miscellaneous activities.

The specialization and coverage ratios for industry 3331 have not been calculated because there is extensive duplication. This duplication is the result of products of some establishments being used as materials by other establishments in the same industry.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials <sup>3</sup>	Value of shipments <sup>3</sup>	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)
INDUSTRY 3331.—PRIMARY COPPER														
1967 Census....	32	32	11.7	80.8	9.2	18.5	61.1	296.9	844.4	1,127.3	51.7	191.4	(NA)	(NA)
1966 ASM <sup>1</sup> .....	(NA)	(NA)	15.8	113.7	13.4	27.8	91.9	362.5	1,349.0	1,701.1	39.9	156.5	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	15.2	105.1	13.1	26.8	85.1	316.9	1,307.4	1,584.4	16.7	145.6	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	14.9	96.4	12.7	25.1	77.7	255.9	1,076.7	1,363.5	9.2	133.7	(NA)	(NA)
1963 Census....	33	33	14.9	96.1	12.7	25.8	77.9	285.5	970.0	1,245.5	13.1	166.4	(NA)	(NA)
1962 ASM <sup>1</sup> .....	(NA)	(NA)	15.3	95.9	12.8	26.0	75.7	246.7	961.1	1,207.1	10.4	152.1	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	15.4	92.8	12.9	26.0	72.4	217.0	922.7	1,168.6	15.1	146.7	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	16.1	93.8	13.8	27.5	74.0	243.4	924.4	1,134.3	10.3	171.8	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	13.1	66.8	11.0	20.4	52.7	166.1	520.9	712.0	9.8	126.7	(NA)	(NA)
1958 Census <sup>2</sup> ...	31	30	14.7	77.4	12.4	24.8	61.6	166.2	687.5	861.1	19.3	148.3	(NA)	(NA)

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

<sup>3</sup>The value of shipments and cost of materials for this industry include substantial duplication arising from shipments between establishments in the same industry.

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For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director



## 1967 CENSUS OF MANUFACTURES

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3331.--PRIMARY COPPER												
United States, total.....	32	32	11.7	80.8	9.2	18.5	61.1	296.9	844.4	1,127.3	51.7	14.9	285.5
Northeast.....	7	7	3.9	27.3	3.0	6.5	21.1	43.6	106.2	157.1	2.9	(D)	(D)
West.....	17	17	5.1	35.6	4.0	7.9	26.4	197.3	542.1	738.3	35.3	6.9	186.5

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total production (gross weight) <sup>a</sup>  (1,000 short tons)	Shipments including interplant transfers <sup>1</sup>						Shipments of products made from materials owned by others <sup>2</sup> (gross weight) (1,000 short tons)	Produced and consumed in the same plant in manufacture of other products (gross weight) (1,000 short tons)
			Total		Shipments to all other companies		Transfers to other plants of the same company			
			Quantity (gross weight)	Value	Quantity (gross weight)	Value	Quantity (gross weight)	Value		
			(1,000 short tons)	(million dollars)	(1,000 short tons)	(million dollars)	(1,000 short tons)	(million dollars)		
			1967							
3331- --	PRIMARY COPPER, TOTAL.....	}	(X)	1,307.6	(X)	(D)	(X)	(D)	}	(NA)
33311 --	Copper smelter products.....		(X)	486.1	(X)	(D)	(X)	(D)		
33311 11	Blister or anode copper.....		702.1	479.9	(D)	(D)	(D)	(D)		
33311 51	Matte, speiss, flue dust, residues, etc.....		12.4	6.2	(D)	(D)	(D)	(D)		
33312 --	} Refined copper		(X)	821.5	(D)	(D)	(D)	(D)		
33412 --										
33312 --	Made by primary copper refiners (industry 3331).....		(X)	455.8	(D)	(D)	(D)	(D)		
33412 --	Made by secondary refiners (industry 3341) and other industries.....		(X)	365.7	(D)	(D)	(D)	(D)		
33312 11	} Copper unalloyed.....		691.2	582.0	(D)	(D)	(D)	(D)		
33412 11										
33312 15	} Copper-base alloys.....	232.3	209.1	(D)	(D)	(D)	(D)			
33412 31										
33312 00	Refined primary copper, n.s.k.....	(X)	30.4	(X)	30.4	(X)	-			
			1963							
3331- --	PRIMARY COPPER, TOTAL.....	(X)	(X)	1,297.1	(X)	(D)	(X)	(D)	(X)	(X)
33311 --	Copper smelter products.....	(X)	(X)	628.5	(D)	(D)	(D)	(D)	(X)	113.4
33311 11	Blister or anode copper.....	1,497.1	1,068.9	614.6	439.9	259.9	629.1	354.8	360.1	} 113.4
33311 51	Matte, speiss, flue dust, residues, etc.....	92.8	33.7	13.9	(D)	(D)	(D)	(D)	4.6	
33312 --	} Refined copper.....	(X)	(X)	668.6	(D)	(D)	(D)	(D)	(X)	(D)
33412 --										
33312 --	Made by primary copper refiners (industry 3331).....	1,796.8	640.7	421.4	(D)	(D)	(D)	(D)	(X)	(X)
33412 --	Made by secondary refiners (industry 3341) and other industries.....	(X)	(X)	247.2	(D)	(D)	(D)	(D)	(X)	(X)
33312 11	} Copper unalloyed.....	1,858.8	725.4	470.3	725.4	470.3	-	-	1,180.2	(D)
33412 11										
33312 15	} Copper-base alloys.....	290.4	305.3	196.8	(D)	(D)	(D)	(D)	3.6	(D)
33412 31										
33312 00	Refined primary copper, n.s.k.....	(X)	(X)	1.5	(X)	1.5	(X)	-	(X)	(X)

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

Data on production, toll shipments, and produced and consumed in the same plant will be published in the final report for this industry.

- Represents zero. (D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higherlevel totals or from related figures. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Includes shipments of these products produced on a toll basis by others. Where data are shown separately for the various industries producing these products, such shipments are included in the industry for the establishment owning the material. However, production data are included in the industry of the toll producer.

<sup>2</sup>Includes toll production.

<sup>3</sup>Includes shipments to other smelters and refiners, shipments to consumers and to some nonmanufacturing companies which sell directly to consumers.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3331.--PRIMARY COPPER <sup>1</sup>					
	Materials, containers, and supplies, total <sup>2</sup> .....		(X)	778.1	(X)	928.3
102100	Copper:					
	Ores, concentrates and precipitates <sup>3</sup> .....	Gross weight thousand short tons.....	3,601.5	448.4	<sup>3</sup> 11,084.8	<sup>3</sup> 496.3
333121	Refined unalloyed copper (cathodes, ingots, cakes, slabs, etc.).	Thousand short tons.....	385.7	284.6	(NA)	(NA)
333111	Blister or anode copper <sup>4</sup> .....	.....do.....			544.2	299.2
999812	Copper and copper-base alloy scrap (purchased scrap only).....	.....do.....			13.9	10.1
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	45.1	(X)	122.8

(NA) Not available. (X) Not applicable.

<sup>1</sup>Smelting and refining establishments were instructed to include in their reports the quantity and cost of purchased materials which they processed or furnished to others for toll processing, but to exclude materials processed on a toll basis for others. Accordingly the data shown in this table exclude considerable quantities of materials consumed by establishments in this industry in the production of the products shown in table 3.

<sup>2</sup>The cost of materials for this industry includes extensive duplication. This duplication arises because the products of some establishments are used as materials by other establishments in the same industry.

<sup>3</sup>Includes leaching ores received in crude form from mines by leaching plants operated in conjunction with smelting and refining operations. Such ores represent about half the total quantity of ores, concentrates and precipitates consumed but about 15 percent of the value of these materials.

<sup>4</sup>Excludes materials consumed by establishments producing copper by leaching or from Lake Superior ores as no distinct blister stage exists in the production at these establishments.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. There were no such small establishments in this industry.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

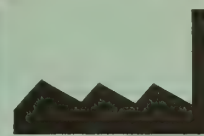
the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

# 1967 CENSUS OF MANUFACTURES



MC67(P)-33C-8 2

## INDUSTRY SERIES

## preliminary report

### Primary lead

SIC Code 3332

The Primary Smelting and Refining of Lead Industry includes establishments primarily engaged in smelting lead from the ore; and in refining lead by any process. Establishments primarily engaged in rolling, drawing, or extruding lead are classified in industry 3356.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Primary Lead Industry amounted to \$304.0 million, an increase of 15 percent compared

with 1963. Value added by manufacture at \$48.3 million in 1967 was 94 percent more than value added in 1963. Average employment in the industry showed an increase of 4 percent from 1963 to a total of 2.7 thousand employees in 1967.

The specialization and coverage ratios for industry 3332 have not been calculated because there is extensive duplication. This duplication is the result of products of some establishments being used as materials by other establishments in the same industry.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials <sup>3</sup>	Value of shipments <sup>3</sup>	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)
INDUSTRY 3332.--PRIMARY LEAD														
1967 Census....	18	18	2.7	18.9	2.1	4.3	13.3	48.3	270.8	304.0	3.4	93.5	(NA)	(NA)
1966 ASM <sup>1</sup> .....	(NA)	(NA)	2.8	18.7	2.3	4.8	14.3	65.0	309.7	367.4	12.0	73.3	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	2.6	16.6	2.2	4.4	12.6	53.0	296.8	342.2	5.3	64.9	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	2.6	16.4	2.2	4.4	12.3	47.0	286.2	327.3	1.5	56.8	(NA)	(NA)
1963 Census....	10	10	2.6	15.0	2.1	4.1	11.2	24.9	228.9	265.1	1.0	50.0	(NA)	(NA)
1962 ASM <sup>1</sup> .....	(NA)	(NA)	2.5	14.6	2.1	4.1	10.9	32.1	230.4	268.8	1.4	62.5	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	2.7	15.4	2.2	4.5	11.5	28.9	251.7	283.0	1.7	68.0	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	2.8	15.7	2.2	4.6	11.6	40.1	281.5	316.7	0.9	69.5	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	2.6	13.8	2.0	3.9	9.7	32.0	177.8	208.9	*0.3	66.0	(NA)	(NA)
1958 Census <sup>2</sup> ...	13	13	3.6	18.2	2.9	5.7	13.6	36.3	292.5	316.9	0.7	66.5	(NA)	(NA)

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability. (NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

<sup>3</sup>The value of shipments and cost of materials for this industry include extensive duplication arising from shipments between establishments in the same industry.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(Geographic data for this industry will not be published separately)

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

Issued October 1969

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total production <sup>2</sup> (gross weight) (1,000 short tons)	Shipments including interplant transfers <sup>1</sup>						Shipments of products made from materials owned by others <sup>3</sup> (gross weight) (1,000 short tons)	Produced and consumed in the same plant in manufacture of other products (gross weight) (1,000 short tons)	
			Total		Shipments to all other companies		Transfers to other plants of the same company				
			Quantity (gross weight) (1,000 short tons)	Value (million dollars)	Quantity (gross weight) (1,000 short tons)	Value (million dollars)	Quantity (gross weight) (1,000 short tons)	Value (million dollars)			
1967											
3332- --	PRIMARY LEAD, TOTAL.....	(NA)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)	
33321 --	Lead smelter products.....	(NA)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)	
33321 11	Base bullion.....	(NA)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)	
33321 51	Matte, speiss, etc.....	(NA)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)	
33323 --	Refined lead.....	(NA)	(X)	355.9	(X)	344.7	(X)	11.2	(NA)	(NA)	
33413 --	Made by primary lead refiners (industry 3332).....	(NA)	(X)	120.9	(X)	(D)	(X)	(D)	(NA)	(NA)	
33323 --	Made by secondary refiners (industry 3341).....	(NA)	(X)	211.7	(X)	(D)	(X)	(D)	(NA)	(NA)	
33413 --	All other industries.....	(NA)	(X)	23.3	(X)	(D)	(X)	(D)	(NA)	(NA)	
33323 11	Refined unalloyed lead.....	(NA)	393.5	105.9	(D)	(D)	(D)	(D)	(NA)	(NA)	
33413 11		Made in industry 3332.....	(NA)	251.3	{	(D)	(D)	(D)	(D)	(NA)	(NA)
33323 11			All other industries.....	(NA)		142.2	40.4	(D)	(D)	(D)	(NA)
33413 11	Made in industry 3341.....	(NA)									
	Lead- and tin-base alloys <sup>4</sup> .....	(NA)	561.1	242.8	(D)	(D)	(D)	(D)	(NA)	(NA)	
	Made in industry 3332.....	(NA)									
	Made in industry 3341.....	(NA)	561.1	242.8	(D)	(D)	(D)	(D)	(NA)	(NA)	
	All other industries.....	(NA)									
33323 31	Antimonial lead.....	(NA)	282.0	87.1	(D)	(D)	(D)	(D)	(NA)	(NA)	
33413 21		Babbitt metal.....	(NA)	9.4	9.1	(D)	(D)	(D)	(D)	(NA)	(NA)
33323 33			Solder.....	(NA)	100.0	90.6	(D)	(D)	(D)	(D)	(NA)
33413 33	Type metal.....	(NA)	140.5	44.1	(D)	(D)	(D)	(D)	(NA)	(NA)	
33323 51	Other lead and tin-base alloys.....	(NA)	29.2	11.9	(D)	(D)	(D)	(D)	(NA)	(NA)	
33413 51		Refined lead, n.s.k.....	(NA)	(X)	7.2	(X)	7.2	-	-	-	-
33323 71											
33413 71											
33323 98											
33413 98											
33323 00											
33413 00											
1963											
3332- --	PRIMARY LEAD, TOTAL.....	(NA)	(NA)	(D)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	
33321 --	Lead smelter products.....	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	97.5	
33321 11	Base bullion.....	279.7	(D)	(D)	(D)	(D)	(D)	(D)	(D)	97.5	
33321 51	Matte, speiss, etc.....	132.4	(D)	(D)	(D)	(D)	(D)	(D)	(D)		
33323 --	Refined lead.....	(X)	(X)	276.4	(X)	256.7	(X)	19.7	(D)	(D)	
33413 --	Made by primary lead refiners (industry 3332).....	(X)	(X)	74.5	(X)	(D)	(X)	(D)	(D)	(D)	
33323 --	Made by secondary refiners (industry 3341).....	(X)	(X)	191.4	(X)	(D)	(X)	(D)	(D)	(D)	
33413 --	All other industries.....	(X)	(X)	10.5	(X)	(D)	(X)	(D)	(D)	(D)	
33323 11	Refined unalloyed lead.....	629.8	443.7	98.5	421.7	93.7	22.0	4.8	(D)	(D)	
33413 11		Made in industry 3332.....	492.7	312.1	68.6	421.7	93.7	22.0	4.8	(D)	(D)
33323 11			All other industries.....	137.1	131.6						
33413 11	Made in industry 3341.....	137.1									
	Lead- and tin-base alloys <sup>4</sup> .....	519.5	479.0	172.8	(D)	(D)	(D)	(D)	(D)	(D)	
	Made in industry 3332.....	519.5									
	Made in industry 3341.....	519.5	479.0	172.8	(D)	(D)	(D)	(D)	(D)	(D)	
	All other industries.....	519.5									
33323 31	Antimonial lead.....	329.3	306.7	72.7	265.2	62.7	41.5	10.1	18.5	(D)	
33413 21		Babbitt metal.....	14.4	13.4	9.2	(D)	(D)	(D)	(D)	(D)	(D)
33323 33			Solder.....	102.3	100.9	69.8	(D)	(D)	(D)	(D)	1.1
33413 33	Type metal.....	39.4	34.5	12.5	(D)	(D)	(D)	(D)	(D)	(D)	
33323 51	Other lead and tin-base alloys.....	34.2	23.4	8.7	(D)	(D)	(D)	(D)	(D)	(D)	
33413 51		Refined lead, n.s.k.....	(X)	(X)	5.1	(X)	5.1	(X)		(X)	(X)
33323 71											
33413 71											
33323 98											
33413 98											
33323 00											
33413 00											

Note: Data on production, toll shipments and produced and consumed in the same plant will be published in the final report in this series.

-Represents zero. (D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or from related figures. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable. <sup>1</sup>Includes shipments of those products produced on a toll basis by others. Where data are shown separately for the various industries producing these products, such shipments are included in the industry for the establishment owning the material. However, production data are included in the industry of the toll processor. <sup>2</sup>Includes toll production. <sup>3</sup>Includes shipments to other smelters and refiners, shipments to consumers and to some nonmanufacturing companies which sell direct to consumers. <sup>4</sup>Includes antimonial lead, babbitt metal, solder, type metal and other lead- and tin-base alloys.



1967 CENSUS OF MANUFACTURES  
TABLE 4. **Materials Consumed, by Kind: 1967 and 1963**

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3332,--PRIMARY LEAD <sup>1</sup>					
	Materials, containers and supplies, total <sup>2</sup> .....		(X)	262.9	(X)	222.3
103200	Lead:					
	Ores and concentrates.....	Gross weight thousand tons....	1,022.6	152.8	866.6	131.7
333233	Refined unalloyed lead.....					
999813	Lead and lead-base alloy scrap.....		(X)	110.1	(X)	90.6
970099	All other materials and components, parts, containers, and supplies consumed.....					

(X) Not applicable.

<sup>1</sup>Smelting and refining establishments were instructed to include in their reports the quantity and cost of purchased materials which they processed or furnished to others for toll processing, but to exclude materials processed on a toll basis for others. Accordingly the data shown in this table excludes considerable quantities of materials consumed by establishments in this industry in the production of the products shown in table 3.

<sup>2</sup>The cost of materials for this industry contains extensive duplication. This duplication arises because the products of some establishments are used as materials by other establishments in the same industry.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. There were no such small establishments in industry 3332.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.

# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees**--All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls**--This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours**--This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials**--The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed**--In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments**--The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



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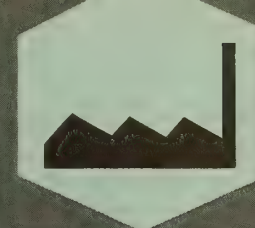
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# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

## preliminary report

### Primary zinc

SIC Code 3333

The Primary Smelting and Refining of Zinc Industry includes establishments primarily engaged in smelting zinc from the ore, and in refining zinc by any process. Establishments primarily engaged in rolling, drawing, or extruding zinc are classified in industry 3356.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Primary Zinc Industry amounted to \$332.8 million, an increase of 18 percent com-

pared with 1963. Value added by manufacture at \$118.6 million in 1967 was 20 percent more than value added in 1963. Average employment in the industry showed no change from 1963 at 8.1 thousand employees.

Of the \$332.8 million total value of shipments and other receipts of establishments classified as primary zinc, \$36.0 million were products primary to other industries; and \$22.2 million were receipts for miscellaneous activities. The industry shipments of primary products represented 88 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 92 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
INDUSTRY 3333.--PRIMARY ZINC														
1967 Census....	18	18	8.1	57.7	6.5	13.5	42.9	118.6	220.8	332.8	25.8	59.5	88	83
1966 ASM <sup>1</sup> .....	(NA)	(NA)	8.6	57.8	7.0	14.4	43.5	133.8	255.4	379.9	18.9	49.8	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	8.4	53.5	6.9	14.0	40.6	126.7	226.4	356.1	7.3	40.1	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	8.6	51.9	7.1	14.4	39.9	143.3	188.2	336.9	5.1	38.6	(NA)	(NA)
1963 Census....	18	18	8.1	47.8	6.6	13.2	36.2	98.8	173.5	281.5	4.7	46.0	92	81
1962 ASM <sup>1</sup> .....	(NA)	(NA)	8.4	48.5	6.9	14.3	36.9	76.3	177.2	258.5	4.5	59.3	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	8.4	46.9	6.7	14.3	35.7	84.2	165.5	257.4	2.7	64.0	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	8.6	47.7	6.7	14.1	34.4	94.6	168.6	252.4	3.0	74.3	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	8.6	45.5	6.8	14.4	33.7	80.6	153.1	236.4	4.1	61.7	(NA)	(NA)
1958 Census <sup>2</sup> ...	20	20	8.9	44.1	7.0	13.8	32.6	71.7	140.2	209.0	13.4	62.0	90	76

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director

The total value of primary zinc shipped by all producers in 1967 was \$330.7 million of which \$274.6 million, or 83 percent, were shipped by plants classified in industry 3333, Primary Zinc, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 81 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3333.--PRIMARY ZINC													
United States, total.....	18	18	8.1	57.7	6.5	13.5	42.9	118.6	220.8	332.8	25.8	8.1	98.8
West South Central....	6	6	3.2	21.0	2.9	5.8	18.2	43.0	80.7	123.1	(D)	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total production <sup>2</sup> (gross weight)  (1,000 short tons)	Shipments including interplant transfers <sup>1</sup>						Shipments of products made from materials owned by others <sup>3</sup> (gross weight) (1,000 short tons)	Produced and consumed in the same plant in manufacture of other products (gross weight) (1,000 short tons)
			Total		Shipments to all other companies		Transfers to other plants of the same company			
			Quantity (gross weight) (1,000 short tons)	Value (million dollars)	Quantity (gross weight) (1,000 short tons)	Value (million dollars)	Quantity (gross weight) (1,000 short tons)	Value (million dollars)		
			1967							
3333- --	PRIMARY ZINC, TOTAL.....	(NA)	1,377.3	330.7	1,287.7	322.0	89.6	8.7	(NA)	(NA)
33331 11	Zinc residues and other zinc smelter products.....	(NA)	244.2	23.6	181.4	17.6	62.8	6.0	(NA)	(NA)
33334 --	Refined zinc.....	(NA)	1,133.1	307.1	1,106.3	304.4	26.8	2.7	(NA)	(NA)
33414 --	Made by primary zinc refiners (industry 3333).....	(NA)	999.4	262.8	1,106.3	304.4	26.8	2.7	(NA)	(NA)
33334 --	Made by secondary refiners (industry 3341).....	(NA)	133.7	44.3						
33414 --	All other industries.....	(NA)								
	Zinc, unalloyed:									
33334 13	Zinc slab, including remelt zinc...	(NA)	873.3	240.5	(D)	(D)	(D)	(D)	(NA)	(NA)
33414 01	Made in industry 3341.....	(NA)	27.2	8.2	(D)	(D)	-	-	(NA)	(NA)
33334 13	Made in industry 3333.....	(NA)	846.1	232.3	(D)	(D)	(D)	(D)	(NA)	(NA)
33334 51	All other industries.....	(NA)								
33334 51	Dust.....	(NA)	44.6	15.2	44.6	15.2	-	-	(NA)	(NA)
33414 05	Made in industry 3341.....	(NA)	28.0	9.7	28.0	9.7	-	-	(NA)	(NA)
33334 51	Made in industry 3333.....	(NA)	16.6	5.5	16.6	5.5	-	-	(NA)	(NA)
33334 61	Zinc-base alloys.....	(NA)	216.1	51.6	(D)	(D)	(D)	(D)	(NA)	(NA)
33414 11	Made in industry 3341.....	(NA)	137.6	25.2	(D)	(D)	(D)	(D)	(NA)	(NA)
33334 61	Made in industry 3333.....	(NA)	78.5	26.4	(D)	(D)	(D)	(D)	(NA)	(NA)
33414 11	All other industries.....	(NA)								
			1963							
3333- --	PRIMARY ZINC, TOTAL.....	1,741.2	1,621.9	308.5	1,437.3	289.8	184.8	18.8	83.2	(D)
33331 11	Zinc residues and other zinc smelter products.....	478.2	492.2	34.8	(D)	(D)	(D)	(D)	(D)	(D)
33334 --	Refined zinc.....	1,263.0	1,129.7	273.7	1,092.9	265.2	36.7	8.6	75.4	96,467
33414 --	Made by primary zinc refiners (industry 3333).....	1,079.3	975.0	230.3	1,092.9	265.2	36.7	8.6	75.4	96,467
33334 --	Made by secondary refiners (industry 3341).....	183.7	154.7	43.5						
33414 --	All other industries.....									
	Zinc, unalloyed:									
33334 13	Zinc slab, including remelt zinc...	971.7	864.6	202.0	836.6	195.4	28.0	6.6	46.5	(D)
33414 01	Made in industry 3341.....	971.7	23.4	5.6	836.6	195.4	28.0	6.6	46.5	(D)
33334 13	Made in industry 3333.....		841.2	196.4						
33334 13	All other industries.....									
33334 51	Dust.....	43.1	44.5	12.9	(D)	(D)	(D)	(D)	(D)	(D)
33414 05	Made in industry 3341.....	16.4	16.3	5.2	(D)	(D)	(D)	(D)	(D)	(D)
33334 51	Made in industry 3333.....	26.7	28.2	7.7	(D)	(D)	(D)	(D)	(D)	(D)
33334 61	Zinc-base alloys.....	248.2	220.6	58.8	(D)	(D)	(D)	(D)	(D)	(D)
33414 11	Made in industry 3341.....	106.1	106.4	26.4	(D)	(D)	(D)	(D)	(D)	(D)
33334 61	Made in industry 3333.....	142.1	114.2	32.4	(D)	(D)	(D)	(D)	(D)	(D)
33414 11	All other industries.....									

Note: Data on production, toll shipments, and produced and consumed in the same plant will be published in the final report for this industry.

(D) Withheld to avoid disclosing figures for individual companies. - Represents zero.

<sup>1</sup>Includes shipments of those products produced on a toll basis by others. Where data are shown separately for the various industries producing these products, such shipments are included in the industry for the establishment owning the material. However, production data are included in the industry of the toll processor.

<sup>2</sup>Includes toll production.

<sup>3</sup>Includes shipments to other smelters and refiners, shipments to consumers and to some nonmanufacturing companies which sell directly to consumers.



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3333.--PRIMARY ZINC <sup>1</sup>					
	Materials, containers, and supplies, total.....		(X)	186.5	(X)	151.9
103300	Zinc: Ores and concentrates.....	Gross weight thousand short tons..	1,757.3	147.5	1,878.8	118.4
333341	Refined unalloyed zinc.....	Thousand short tons.....	(D)	(D)	16.0	3.6
999814	Zinc and zinc-base alloy scrap, including drosses and skimmings (purchased scrap only).....	...do.....	124.7	15.9	106.4	12.9
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	23.0	(X)	16.9

(D) Included with material code 970099, "All other materials and components, parts, containers, and supplies consumed," to avoid disclosing figures for individual companies. (X) Not applicable.

<sup>1</sup>Smelting and refining establishments were instructed to include in their reports the quantity and cost of purchased materials which they processed or furnished to others for all processing, but to include materials processed on a toll basis for others. Accordingly, the data shown in this table excludes considerable quantities of materials consumed by establishments in this industry in the production of the products shown in table 3.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. There were no such small establishments in industry 3333.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

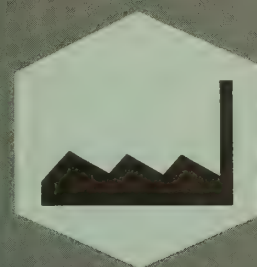
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-33C-4

INDUSTRY SERIES

preliminary  
report

## Primary aluminum

SIC Code 3334

The Primary Production of Aluminum Industry includes establishments primarily engaged in producing aluminum from alumina, and in refining aluminum by any process. Establishments primarily engaged in rolling, drawing, or extruding aluminum are classified in industry 3352.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Primary Aluminum Industry amounted to \$1,608.7 million, an increase of 48 percent compared with 1963. Value added by manufacture at \$811.8 million in 1967 was 62 percent more

than value added in 1963. Average employment in the industry showed an increase of 31 percent from 1963 to a total of 23.8 thousand employees in 1967.

Of the \$1,608.7 million total value of shipments and other receipts of establishments classified as primary aluminum producers, \$20.5 million were products primary to other industries; and \$29.0 million were receipts for miscellaneous activities. The industry shipments of primary products represented 99 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 100 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3334.--PRIMARY ALUMINUM														
1967 Census....	25	24	23.8	190.9	19.2	38.4	145.2	811.8	841.6	1,608.7	151.7	176.7	99	80
1966 ASM <sup>1</sup> .....	(NA)	(NA)	21.1	168.1	17.1	34.7	127.4	725.1	776.1	1,496.2	65.8	113.2	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	20.7	156.5	16.8	33.5	119.9	634.9	707.9	1,364.7	60.5	109.3	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	20.3	146.6	16.7	32.0	111.9	549.2	653.2	1,191.4	51.8	129.6	(NA)	(NA)
1963 Census....	23	22	18.1	134.1	14.5	29.5	101.4	499.6	571.9	1,090.0	62.2	106.5	100	75
1962 ASM <sup>1</sup> .....	(NA)	(NA)	17.2	125.6	13.7	27.9	94.6	472.0	521.8	1,014.9	10.8	124.0	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	16.2	117.2	12.7	26.1	86.2	454.2	489.1	953.9	19.3	139.3	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	17.8	124.0	14.1	29.1	92.5	472.7	503.1	921.2	26.6	157.0	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	18.0	122.6	14.4	30.0	92.6	459.3	476.7	953.8	38.5	101.0	(NA)	(NA)
1958 Census <sup>2</sup> ...	20	20	17.4	111.6	13.4	27.7	82.7	383.8	411.8	808.8	142.3	111.3	100	76

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued November 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

Harold C. Passer, Assistant Secretary for Economic Affairs

BUREAU OF THE CENSUS George Hay Brown, Director



The total value of primary aluminum shipped by all producers in 1967 was \$1,958.8 million of which \$1,559.2 million, or 80 percent, were shipped by plants classified in industry 3334, Primary Aluminum, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 75 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3334, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

M33-2, Aluminum Ingot and Mill Products

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
	INDUSTRY 3334.--PRIMARY ALUMINUM												
United States, total.....	25	24	23.8	190.9	19.2	38.4	145.2	811.8	841.6	1,608.7	151.7	18.1	499.6
South.....	11	11	12.8	100.9	10.4	20.3	77.1	450.8	431.2	864.6	37.2	(D)	(D)
West South Central..	6	6	7.3	57.2	5.9	11.6	42.9	253.6	209.1	454.4	12.6	6.4	168.1
West.....	10	9	6.4	51.0	5.1	10.1	37.7	228.8	252.2	462.0	111.1	4.8	159.3

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total production (gross weight) <sup>2</sup>  (1,000 short tons)	Shipments including interplant transfers <sup>1</sup>						Shipments of products made from materials owned by others <sup>3</sup>  (gross weight) (1,000 short tons)	Produced and consumed in the same plant in manufacture of other products (gross weight)  (1,000 short tons)
			Total		Shipments to all other companies		Transfers to other plants of the same company			
			Quantity (gross weight)	Value	Quantity (gross weight)	Value	Quantity (gross weight)	Value		
			(1,000 short tons)	(1,000 short tons)	(million dollars)	(1,000 short tons)	(million dollars)	(1,000 short tons)		
			1967							
3334- --	PRIMARY ALUMINUM, TOTAL.....	(NA)	4,092.6	1,958.8	2,217.4	1,051.4	1,875.2	907.4	(NA)	(NA)
33347 --	Aluminum ingot <sup>4</sup> .....	(NA)	3,464.0	1,662.3	1,805.6	879.3	1,658.4	783.0	(NA)	(NA)
33417 --										
33527 --										
33347 11	Made in primary aluminum industry (industry 3334).....	(NA)	2,767.2	1,332.4	1,168.3	587.3	1,598.9	745.1	(NA)	(NA)
33527 11	Made in aluminum rolling mills (industry 3352) <sup>4</sup> .....	(NA)	73.3	48.4	637.3	292.0	59.5	37.9	(NA)	(NA)
33417 11	Made in secondary nonferrous metals industry (industry 3341).....	(NA)	623.5	281.5						
	All other industries.....	(NA)								
33348 --	Aluminum extrusion billet <sup>4</sup> .....	(NA)	628.6	296.5	411.8	172.1	216.8	124.4	(NA)	(NA)
33528 --										
33418 --										
33348 11	Made in primary aluminum industry (industry 3334).....	(NA)	486.7	226.8	311.3	124.8	175.4	102.0	(NA)	(NA)
33528 11	Made in aluminum rolling mills (industry 3352) <sup>4</sup> .....	(NA)	57.0	30.4	100.5	47.3	41.4	22.4	(NA)	(NA)
33418 11	Made in secondary nonferrous metals industry (industry 3341).....	(NA)	84.9	39.3						
	All other industries.....	(NA)								
			1963							
3334- --	PRIMARY ALUMINUM, TOTAL.....	3,740.1	3,169.0	1,420.2	1,834.0	807.4	1,335.0	612.8	67.9	738.7
33347 --	Aluminum ingot <sup>4</sup> .....	3,135.6	2,754.9	1,234.7	1,543.2	680.6	1,211.7	554.1	24.3	515.3
33417 --										
33527 --										
33347 11	Made in primary aluminum industry (industry 3334).....	2,008.6	2,118.6	946.8	965.3	426.7	1,153.3	520.1	24.3	515.3
33527 11	Made in aluminum rolling mills (industry 3352) <sup>4</sup> .....	562.0	86.2	49.0	577.9	253.9	58.4	34.0		
33417 11	Made in secondary nonferrous metals industry (industry 3341).....	565.1	540.5	230.7						
	All other industries.....		9.6	8.2						
33348 --	Aluminum extrusion billet <sup>4</sup> .....	604.4	414.0	185.5	290.8	126.8	123.3	58.7	43.7	223.5
33528 --										
33418 --										
33348 11	Made in primary aluminum industry (industry 3334).....	254.5	272.1	122.8	193.6	86.2	78.5	36.6	-	-
33528 11	Made in aluminum rolling mills (industry 3352) <sup>4</sup> .....	288.7	109.0	48.7	64.2	26.6	44.7	22.1	16.2	223.5
33418 11	Made in secondary nonferrous metals industry (industry 3341).....	61.2	33.0	13.9	33.0	13.9	-	-	27.4	-
	All other industries.....									

Note: Data on production, toll shipments, and produced and consumed in the same plant will be published in the final report for this industry.

- Represents zero. (NA) Not available.

<sup>1</sup>Includes shipments of these products produced on a toll basis by others. Where data are shown separately for the various industries producing these products, such shipments are included in the industry for the establishment owning the material. However, production data are included in the industry of the toll processor.

<sup>2</sup>Includes toll production.

<sup>3</sup>Includes shipments to other smelters and refineries, shipments to consumer and to some nonmanufacturing companies which sell directly to consumer.

<sup>4</sup>Most of the aluminum ingot and billet (alloys) produced by aluminum rolling mills represent duplication of tonnages reported by the Primary Aluminum Industry (3334), in that the metal produced by the rolling mills is made from ingot produced in primary aluminum plants.

## 1967 CENSUS OF MANUFACTURES

TABLE 4. **Materials Consumed, by Kind: 1967 and 1963**

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3334.--PRIMARY ALUMINUM <sup>1</sup>					
	Materials, containers, and supplies, total.....		(X)	637.9	(X)	434.3
281951	Alumina.....	1,000 gross weight short tons.....	5,692.5	365.6	4,461.6	291.2
999812	Copper and copper-base alloy scrap (purchased scrap only).....	1,000 short tons.	(X)	272.3	4.6	2.6
970099	All other materials and components, parts, containers, and supplies consumed.....				(X)	140.6

(X) Not applicable.

<sup>1</sup>Smelting and refining establishments were instructed to include in their reports quantity and cost of purchased materials which they processed and furnished to others for toll processing, but to exclude materials processed on a toll basis for others. Accordingly, the data shown in this table excludes considerable quantities of materials consumed by establishments in these industries in the production of the products shown in table 3.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. There were no such small establishments in this industry.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

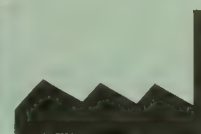
**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# 1967 CENSUS OF MANUFACTURES



MC67(P)-33C-5

## INDUSTRY SERIES

**preliminary  
report**

### Primary nonferrous metals, n.e.c.

SIC Code 3339

The Primary Smelting and Refining of Nonferrous Metals, Not Elsewhere Classified, Industry includes establishments primarily engaged in smelting and refining nonferrous metals, not elsewhere classified. Establishments primarily engaged in rolling, drawing, and extruding these nonferrous primary metals are classified in industry 3356, and the production of bullion at the site of the mine is classified in the mining industries.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classi-

fied in the Primary Nonferrous Metals, N.E.C., Industry amounted to \$282.3 million, an increase of 33 percent compared with 1963. Value added by manufacture at \$137.7 million in 1967 was 33 percent more than value added in 1963. Average employment in the industry showed an increase of 39 percent from 1963 to a total of 7.1 thousand employees in 1967.

Of the \$282.3 million total value of shipments and other receipts of establishments classified as primary nonferrous metals, n.e.c., \$26.9 million were products primary to other industries; and \$19.3 million were receipts for miscellaneous activities. The industry shipments of primary products represented 90 percent of the total manufactured product shipments, primary and

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3339.--PRIMARY NONFERROUS METALS, N.E.C.														
1967 Census....	49	28	7.1	56.6	5.2	11.1	37.9	137.7	157.1	282.3	22.5	72.8	90	38
1966 ASM <sup>1</sup> .....	(NA)	(NA)	7.0	53.5	5.3	11.3	37.1	129.5	183.8	309.2	31.0	62.8	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	5.9	42.6	4.5	9.4	29.5	100.9	143.6	246.8	19.8	57.6	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	4.5	31.9	3.4	7.3	22.6	93.7	115.4	204.4	9.2	59.6	(NA)	(NA)
1963 Census.....	35	26	5.1	34.8	3.8	8.1	24.7	103.8	115.5	212.2	6.4	55.8	83	39
1962 ASM <sup>1</sup> .....	(NA)	(NA)	4.9	30.7	3.7	7.6	22.2	93.4	80.6	169.7	6.4	47.3	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	4.0	24.6	3.0	6.4	18.5	82.4	65.1	148.5	13.7	34.2	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	4.1	26.4	3.2	7.0	19.6	90.0	68.1	149.2	11.5	34.3	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	2.7	17.3	1.9	4.3	11.9	54.5	45.3	99.2	*13.1	18.6	(NA)	(NA)
1958 Census <sup>2</sup> ...	29	18	2.7	15.9	1.9	4.0	10.7	50.5	42.1	96.6	4.0	17.4	92	24

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued November 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**

secondary. This percent, called the specialization ratio for the industry, was 83 percent in 1963.

The total value of primary nonferrous metals, n.e.c., shipped by all producers in 1967 was \$617.8 million of which \$236.1 million, or 38 percent, were shipped by plants classified in industry 3339, Primary Nonferrous Metals, N.E.C., while the remainder was shipped by plants classified

in other industries. This percent, called the coverage ratio, was 39 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture  (million dollars)	Cost of materials  (million dollars)	Value of shipments  (million dollars)	Capital expenditures, new  (million dollars)	All employees  (1,000)	Value added by manufacture  (million dollars)
	Total  (number)	With 20 employees or more (number)	Number  (1,000)	Payroll  (million dollars)	Number  (1,000)	Man-hours  (millions)	Wages  (million dollars)						
INDUSTRY 3339.--PRIMARY NONFERROUS METALS, N.E.C.													
United States, Total.....	49	28	7.1	56.6	5.2	11.1	37.9	137.7	157.1	282.3	22.5	5.1	103.8
Northeast.....	19	10	1.4	10.9	0.9	2.1	6.8	28.9	68.3	90.8	2.6	1.1	26.9
South.....	12	9	3.4	28.4	2.6	5.5	19.3	76.6	48.0	121.9	(b)	1.8	38.6

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total production (gross weight)	Shipments including interplant transfers						Shipments of products made from materials owned by others <sup>3</sup>	Produced and consumed in the same plant in manufacture of other products	
			Total		Shipments to all other companies		Transfers to other plants of the same company				
			Quantity (gross weight)	Value (million dollars)	Quantity (gross weight)	Value (million dollars)	Quantity (gross weight)	Value (million dollars)			
1967											
3339- --	PRIMARY NONFERROUS METALS, N.E.C., TOTAL.	(NA)	(1,000 troy oz.) (NA)	617.8	(1,000 troy oz.) (D)	(D)	(D)	(D)	(NA)	(NA)	
33395 -- 33415 --	Precious metals.....	(NA)	(NA)	282.4	(D)	(D)	(D)	(D)	(NA)	(NA)	
Unalloyed:											
33395 11 33415 11	Gold.....	(NA)	1,588.5	55.6	(D)	(D)	(D)	(D)	(NA)	(NA)	
33395 51 33415 31	Silver.....	(NA)	(NA)	137.4	(NA)	135.8	(NA)	1.6	(NA)	(NA)	
33395 31 33415 51	Platinum, including platinum group metals.....	(NA)	(NA)	33.7	(D)	(D)	(D)	(D)	(NA)	(NA)	
	Made in industry 3341.....	(NA)	(NA)	32.7	(D)	(D)	(D)	(D)	(NA)	(NA)	
	Made in primary nonferrous metals, n.e.c., industry (industry 3339) and other industries.....	(NA)	(NA)	1.0	(D)	(D)	(D)	(D)	(NA)	(NA)	
Alloys:											
33395 61 33415 71	Silver-base.....	(NA)	}	(NA)	55.8	(NA)	55.8	-	-	(NA)	(NA)
33395 65 33415 81	Gold-base.....	(NA)								(NA)	(NA)
33395 69 33415 89	Other precious metal, including platinum-group.....	(NA)								(NA)	(NA)
33415 00	Precious metals, n.s.k.....	(NA)								(NA)	(NA)
33397 -- 33416 --	Other nonferrous metals.....	(NA)	(1,000 short tons) (NA)	325.7	(1,000 short tons) (D)	(D)	(D)	(D)	(NA)	(NA)	
Unalloyed:											
33397 21 33416 51	Cadmium.....	(NA)	(NA)	17.8	(D)	(D)	(D)	(D)	(NA)	(NA)	
33397 51 33416 69	Nickel.....	(NA)	(NA)	0.7	(NA)	0.7	-	-	(NA)	(NA)	
33397 61 33416 71	Tin.....	(NA)	(NA)	12.8	(D)	(D)	(D)	(D)	(NA)	(NA)	
33397 71 33416 81	Titanium sponge.....	(NA)	}	(NA)	(D)	(D)	(D)	(D)	(NA)	(NA)	
33397 11 33416 61	Magnesium unalloyed.....	(NA)							(NA)	(NA)	
33397 89 33416 89	Other nonferrous metals, including metal bearing furnace residues and other metal products which have to be further re-fined before sale to customers.....	(NA)							(NA)	(NA)	
Alloyed:											
33397 93 33416 31	Nickel-base alloys.....	(NA)	(NA)	20.4	(D)	(D)	(D)	(D)	(NA)	(NA)	
33397 98 33416 43	Other nonferrous metal alloys.....	(NA)	}	(NA)	(D)	(D)	(D)	(D)	(NA)	(NA)	
33397 92 33416 21	Magnesium-base alloys.....	(NA)							(NA)	(NA)	
33397 00 33416 00	Other nonferrous metals, n.s.k.....	(NA)	(X)	4.6	(X)	4.6	(X)	-	(NA)	(NA)	
33390 00	Primary nonferrous metals n.e.c., n.s.k. (For companies with 10 or more employees. See Note.).....	(NA)	(X)	8.7	(X)	8.7	(X)	-	(NA)	(NA)	
33390 02	Primary nonferrous metals n.e.c., n.s.k. (For companies with fewer than 10 employees. See Note.).....	(NA)	(X)	1.0	(X)	1.0	(X)	-	(NA)	(NA)	

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total production <sup>2</sup> (gross weight)	Shipments including interplant transfers <sup>1</sup>						Shipments of products made from materials owned by others <sup>3</sup> (gross weight)	Produced and consumed in the same plant in manufacture of other products (gross weight)			
			Total		Shipments to all other companies		Transfers to other plants of the same company						
			Quantity (gross weight)	Value (million dollars)	Quantity (gross weight)	Value (million dollars)	Quantity (gross weight)	Value (million dollars)					
			1963										
		(1,000 troy oz.) (NA)	(1,000 troy oz.) (NA)		(1,000 troy oz.) (D)		(D)	(1,000 troy oz.) (D)		(D)	(1,000 troy oz.) (X)		(X)
3339- --	PRIMARY NONFERROUS METALS, N.E.C., TOTAL.			439.4		(D)		(D)			(X)		(X)
33395 --	Precious metals.....	(NA)	(NA)	246.4		(D)		(D)			(X)		(X)
33415 --	Unalloyed:												
33395 11	Gold.....	2,505.5	1,493.8	53.6		(D)		(D)			941		(D)
33415 11													
33395 51	Silver.....	(NA)	(NA)	107.4		(D)		(D)			(NA)		(D)
33415 31													
33395 31	Platinum, including platinum-group metals.....	(NA)	(NA)	25.0		(D)		(D)			(NA)		(D)
33415 51	Made in industry 3341.....	(NA)	(NA)	22.7		(D)		(D)			(NA)		-
	Made in primary nonferrous metals, n.e.c., industry (industry 3339) and other industries.....	(NA)	(NA)	2.3		(D)		(D)			(NA)		(D)
	Alloys:												
33395 61	Silver-base.....	(NA)	(NA)	60.4	(NA)	60.4	-	-	(NA)	(D)			
33415 71	Gold-base.....												
33395 65													
33415 81													
33395 69	Other precious metal, including platinum-group.....												
33415 89													
33415 00	Precious metals, n.s.k.....												
		(1,000 s. tons)	(1,000 s. tons)		(1,000 s. tons)			(1,000 s. tons)			(1,000 s. tons)		(1,000 s. tons)
33397 --	Other nonferrous metals.....	(NA)	(NA)	193.0		(D)		(D)			(X)		(X)
33416 --	Unalloyed:												
33397 21	Cadmium.....	4.1	4.3	17.9		(D)		(D)			(D)		(D)
33416 51													
33397 11	Magnesium.....	80.7	56.8	39.5		(D)		(D)			-		(D)
33416 61													
33397 51	Nickel.....	1.6	1.1	1.7	1.1	1.7	-	-	-	-	-	-	-
33416 69													
33397 61	Tin.....	(NA)	(NA)	7.9		(D)		(D)			(D)		(D)
33416 71													
33397 71	Titanium sponge.....												
33416 81													
33397 79	Other unalloyed nonferrous metals including metal bearing furnace residues and other metal products which have to be further refined before sale to customers.....	(NA)	(NA)	85.0	(NA)	65.4	(NA)	19.5	(NA)		(NA)		(NA)
33416 89													
	Alloyed:												
33397 92	Magnesium-base alloys.....	31.7	26.7	17.3		(D)		(D)			-		(D)
33416 21													
33397 93	Nickel-base alloys.....	3.8	3.7	10.7	3.7	10.7	-	-	(D)		-		-
33416 31													
33397 98	Other nonferrous metal alloys.....	(NA)	(NA)	7.7		(D)		(D)			-		-
33416 43													
33397 00	Other nonferrous metals, n.s.k.....	(X)	(X)	5.3	(NA)	5.3	-	-	(X)		(X)		(X)
33416 00													

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

Data on production, toll shipments and produced and consumed in the same plant will be published in the final report for this industry.

- Represents zero. (D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or from related figures. (NA) Not available. (X) Not applicable. n.e.c. Not elsewhere classified. n.s.k. Not specified by kind.

<sup>1</sup>Includes shipments of these products produced on a toll basis by others. Where data are shown separately for the various industries producing these products, such shipments are included in the industry for the establishment owning the material. However, production data are included in the industry of the toll processor.

<sup>2</sup>Includes toll production.

<sup>3</sup>Includes shipments to other smelters and refiners, shipments to consumers and to some nonmanufacturing companies which sell direct to consumers.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(Not applicable to this report)

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3339, these small establishments accounted for less than 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-33C-6

## INDUSTRY SERIES

### Secondary nonferrous metals

SIC Code 3341

**preliminary  
report**

The Secondary Smelting and Refining of Nonferrous Metals Industry includes establishments primarily engaged in recovering nonferrous metals and alloys from new and used scrap and dross, but which are not engaged in further fabrication. This industry includes establishments engaged in both the recovering and alloying of precious metals. Plants engaged in the recovery of tin through secondary smelting and refining, as well as by chemical processes, are included in this industry. Establishments primarily engaged in assembling, sorting, and breaking up scrap metal, without smelting and refining are classified in trade industries.

The classification of establishments for which data are tabulated in this report is based upon

the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Secondary Nonferrous Metals Industry amounted to \$1,619.0 million, an increase of 55 percent compared with 1963. Value added by manufacture at \$275.8 million in 1967 was 21 percent more than value added in 1963. Average employment in the industry showed an increase of 12 percent from 1963 to a total of 17.3 thousand employees in 1967.

Of the \$1,619.0 million total value of shipments and other receipts of establishments classified as secondary nonferrous metals, \$175.1

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3341.--SECONDARY NONFERROUS METALS														
1967 Census....	403	185	17.3	123.8	12.9	26.8	79.1	275.8	1,342.3	1,619.0	41.2	180.4	91	27
1966 ASM <sup>1</sup> .....	(NA)	(NA)	16.8	116.9	12.5	26.3	74.4	293.3	1,409.9	1,709.2	29.6	172.2	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	16.1	107.9	11.8	24.9	68.0	240.1	1,252.4	1,493.6	27.6	165.1	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	16.5	110.9	11.9	25.9	70.0	265.6	1,027.2	1,290.6	17.2	156.5	(NA)	(NA)
1963 Census....	459	179	15.4	96.3	11.3	23.8	60.5	228.2	823.1	1,045.5	17.9	143.1	94	26
1962 ASM <sup>1</sup> .....	(NA)	(NA)	15.7	99.0	12.4	26.4	64.6	188.8	781.9	971.8	*10.4	121.0	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	15.8	97.1	12.4	26.9	62.8	180.8	782.0	957.8	14.9	131.0	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	16.5	94.4	12.7	27.6	59.3	167.5	749.4	923.1	10.0	119.9	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	16.2	89.1	12.6	26.3	55.9	166.7	754.3	906.1	7.5	124.6	(NA)	(NA)
1958 Census <sup>2</sup> ...	387	152	14.4	75.7	10.8	21.2	46.9	147.3	581.6	724.0	5.4	105.3	93	30

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 5 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**

million were products primary to other industries; and \$330.5 million were receipts for miscellaneous activities. The industry shipments of primary products represented 91 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 94 percent in 1963.

The total value of secondary nonferrous metal shipped by all producers in 1967 was \$4,127.6 million of which \$1,113.4 million, or 27 percent, were shipped by plants classified in industry

3341, Secondary Nonferrous Metals, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 26 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3341.--SECONDARY NONFERROUS METALS													
United States, total.....	403	185	17.3	123.8	12.9	26.8	79.1	275.8	1,342.3	1,619.0	41.2	15.4	228.2
Northeast.....	155	57	5.6	39.6	4.0	8.0	24.6	88.9	513.2	602.3	5.6	5.6	85.2
New York.....	54	13	1.6	10.8	1.2	2.3	7.3	25.5	134.7	161.2	2.0	1.9	27.9
Pennsylvania.....	35	19	1.9	13.3	1.3	2.7	8.1	22.7	146.2	169.9	1.5	1.7	25.0
East North Central....	109	61	6.6	50.0	5.0	10.5	31.8	102.3	471.0	575.5	9.5	5.6	84.7
Illinois.....	35	22	2.7	20.5	2.0	4.1	12.6	39.4	222.8	263.1	1.8	2.6	35.7
West North Central....	16	9	0.9	5.7	0.6	1.3	3.8	17.2	118.4	133.9	17.6	0.5	5.1
South Atlantic.....	24	10	0.9	5.9	0.7	1.6	4.2	13.0	64.6	75.9	1.2	0.8	13.7
East South Central....	15	9	0.7	4.0	0.6	1.1	2.8	13.8	36.6	49.6	1.1	0.4	4.8
Alabama.....	7	4	0.4	2.5	0.4	0.7	1.9	7.1	21.9	28.4	(D)	0.3	3.5
West South Central....	20	12	0.8	5.1	0.7	1.5	3.6	8.2	46.0	54.9	0.7	0.8	10.9
Mountain.....	13	2	0.1	0.7	0.1	0.2	0.5	1.9	3.3	5.3	(Z)	0.1	0.9
Pacific.....	51	25	1.8	12.9	1.3	2.5	7.9	30.4	89.3	121.5	5.4	1.7	22.8
California.....	45	21	1.6	11.5	1.1	2.2	6.9	27.8	82.8	112.3	2.6	1.5	20.0

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total production <sup>2</sup>  (gross weight)	Shipments including interplant transfers <sup>1</sup>						Shipments of products made from materials owned by others <sup>3</sup>  (gross weight)	Produced and consumed in the same plant in manufacture of other products  (gross weight)
			Total		Shipments to all other companies		Transfers to other plants of the same company			
			Quantity (gross weight)	Value (million dollars)	Quantity (gross weight)	Value (million dollars)	Quantity (gross weight)	Value (million dollars)		
1967										
		(1,000 short tons)	(1,000 short tons)		(1,000 short tons)		(1,000 short tons)		(1,000 short tons)	(1,000 short tons)
3341- --	SECONDARY NONFERROUS METALS, TOTAL.....	(NA)	(X)	4,127.6	(D)	(D)	(D)	(D)	(NA)	(NA)
33312 -- 33412 --	Refined copper.....	(NA)	(X)	821.5	(D)	(D)	(D)	(D)	(NA)	(NA)
33312 --	Made by primary copper refiners (industry 3331).....	(NA)	(X)	455.8	(D)	(D)	(D)	(D)	(NA)	(NA)
33412 --	Made by secondary refiners (industry 3341) and other industries.....	(NA)	(X)	365.7	(D)	(D)	(D)	(D)	(NA)	(NA)
33312 11 33412 11	Copper unalloyed.....	(NA)	691.2	582.0	(D)	(D)	(D)	(D)	(NA)	(NA)
33312 15 33412 31	Copper-base alloys.....	(NA)	232.3	209.1	(D)	(D)	(D)	(D)	(NA)	(NA)
33312 00	Refined primary copper, n.s.k.....	(NA)	(X)	30.4	(X)	30.4	(X)	-	(NA)	(NA)
33323 -- 33413 --	Refined lead.....	(NA)	(X)	355.9	(X)	344.7	(X)	11.2	(NA)	(NA)
33323 --	Made by primary lead refiners (industry 3332).....	(NA)	(X)	120.9	(X)	(D)	(X)	(D)	(NA)	(NA)
33413 --	Made by secondary refiners (industry 3341) and other industries.....	(NA)	(X)	216.7	(X)	(D)	(X)	(D)	(NA)	(NA)
		(NA)	(X)	23.3	(X)	(D)	(X)	(D)	(NA)	(NA)
33323 11 33413 11	Refined unalloyed lead.....	(NA)	393.5	105.9	(D)	(D)	(D)	(D)	(NA)	(NA)
33323 11	Made in industry 3332.....	(NA)	251.3	65.5	(D)	(D)	(D)	(D)	(NA)	(NA)
33413 11	All other industries.....	(NA)	142.2	40.4	(D)	(D)	(D)	(D)	(NA)	(NA)
	Made in industry 3341.....	(NA)								
	Lead-and tin-base alloys <sup>4</sup> .....	(NA)	561.1	242.8	(D)	(D)	(D)	(D)	(NA)	(NA)
	Made in industry 3332.....	(NA)	561.1	242.8	(D)	(D)	(D)	(D)	(NA)	(NA)
	Made in industry 3341.....	(NA)								
	All other industries.....	(NA)								
33323 31 33413 21	Antimonial lead.....	(NA)	282.0	87.1	(D)	(D)	(D)	(D)	(NA)	(NA)
33323 33 33413 33	Babbitt metal.....	(NA)	9.4	9.1	(D)	(D)	(D)	(D)	(NA)	(NA)
33323 51 33413 51	Solder.....	(NA)	100.0	90.6	(D)	(D)	(D)	(D)	(NA)	(NA)
33323 71 33413 71	Type metal.....	(NA)	140.5	44.1	(D)	(D)	(D)	(D)	(NA)	(NA)
33323 98 33413 98	Other lead and tin-base alloys.....	(NA)	29.2	11.9	(D)	(D)	(D)	(D)	(NA)	(NA)
33323 00 33413 00	Refined lead, n.s.k.....	(NA)	(X)	7.2	(D)	7.2	-	-	(NA)	(NA)
33334 -- 33414 --	Refined zinc.....	(NA)	1,133.1	307.1	1,106.3	304.4	26.8	2.7	(NA)	(NA)
33334 --	Made by primary zinc refiners (industry 3333).....	(NA)	999.4	262.8	1,106.3	304.4	26.8	2.7	(NA)	(NA)
33414 --	Made by secondary refiners (industry 3341) and other industries.....	(NA)	133.7	44.3						
	Zinc, unalloyed:									
33334 13 33414 01	Zinc slab, including remelt zinc.....	(NA)	873.3	240.5	(D)	(D)	(D)	(D)	(NA)	(NA)
33334 01	Made in industry 3341.....	(NA)	27.2	8.2	(D)	(D)	(D)	(D)	(NA)	(NA)
33334 13	Made in industry 3333.....	(NA)	846.1	232.3	(D)	(D)	(D)	(D)	(NA)	(NA)
	All other industries.....	(NA)								
33334 51 33414 05	Dust.....	(NA)	44.6	15.2	44.6	15.2	-	-	(NA)	(NA)
33334 05	Made in industry 3341.....	(NA)	28.0	9.7	28.0	9.7	-	-	(NA)	(NA)
33334 51	Made in industry 3333.....	(NA)	16.6	5.5	16.6	5.5	-	-	(NA)	(NA)
33334 61 33414 11	Zinc-base alloys.....	(NA)	216.1	51.6	(D)	(D)	(D)	(D)	(NA)	(NA)
33334 61	Made in industry 3333.....	(NA)	137.6	25.2	(D)	(D)	(D)	(D)	(NA)	(NA)
33414 11	Made in industry 3341.....	(NA)	78.5	26.4	(D)	(D)	(D)	(D)	(NA)	(NA)
	All other industries.....	(NA)								

See footnotes at end of table.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total production <sup>2</sup>  (gross weight)	Shipments including interplant transfers <sup>1</sup>						Shipments of products made from materials owned by others <sup>3</sup>  (gross weight)	Produced and consumed in the same plant in manufacture of other products (gross weight)	
			Total		Shipments to all other companies		Transfers to other plants of the same company				
			Quantity (gross weight)	Value (million dollars)	Quantity (gross weight)	Value (million dollars)	Quantity (gross weight)	Value (million dollars)			
1967											
3341- --	SECONDARY NONFERROUS METALS--Continued	(1,000 s. tons)	(1,000 s. tons)		(1,000 s. tons)		(1,000 s. tons)		(1,000 s. tons)	(1,000 s. tons)	
33347 --	Aluminum ingot <sup>5</sup> .....	(NA)	3,464.0	1,662.3	1,805.6	879.3	1,658.4	783.0	(NA)	(NA)	
33417 --											
33527 --											
33347 11	Made in primary aluminum industry (industry 3334).....	(NA)	2,767.2	1,332.4	1,168.3	587.3	1,598.9	745.1	(NA)	(NA)	
33527 11	Made in aluminum rolling mills (industry 3352) <sup>5</sup> .....	(NA)	73.3	48.4	637.3	292.0	59.5	37.9	(NA)	(NA)	
33417 11	Made in secondary nonferrous metals industry (industry 3341).....	(NA)	623.5	281.5							
	All other industries.....	(NA)									
33348 --	Aluminum extrusion billet <sup>5</sup> .....	(NA)	628.6	296.5	411.8	172.1	216.8	124.4	(NA)	(NA)	
33528 --											
33418 --											
33348 11	Made in primary aluminum industry (industry 3334).....	(NA)	486.7	226.8	311.3	124.8	175.4	102.0	(NA)	(NA)	
33528 11	Made in aluminum rolling mills (industry 3352) <sup>5</sup> .....	(NA)	57.0	30.4	100.5	47.3	41.4	22.4	(NA)	(NA)	
33418 11	Made in secondary nonferrous metals industry (industry 3341).....	(NA)	34.9	39.3							
	All other industries.....	(NA)									
		1,000 troy ounces	1,000 troy ounces		1,000 troy ounces		1,000 troy ounces		1,000 troy ounces		
33395 --	Precious metals.....	(NA)	(NA)	282.4	(D)	(D)	(D)	(D)	(NA)	(NA)	
33415 --											
33395 11	Unalloyed:										
33415 11		Gold.....	(NA)	1,588.5	55.6	(D)	(D)	(D)	(D)	(NA)	(NA)
33395 51		Silver.....	(NA)	(NA)	137.4	(NA)	135.8	(NA)	1.6	(NA)	(NA)
33415 31											
33395 31	Platinum, including platinum-group metals.....	(NA)	(NA)	33.7	(D)	(D)	(D)	(D)	(NA)	(NA)	
33415 51											
		Made in industry 3341.....	(NA)	(NA)	32.7	(D)	(D)	(D)	(D)	(NA)	(NA)
	Made in primary nonferrous metals, n.e.c. industry (industry 3339) and other industries.....	(NA)	(NA)	1.0	(D)	(D)	(D)	(D)	(NA)	(NA)	
33395 61	Alloys:										
33415 71		Silver-base.....	(NA)	(NA)	55.8	(NA)	55.8	-	-	(NA)	(NA)
33395 65		Gold-base.....									
33415 81	Other precious metal, including platinum-group.....										
33395 69											
33415 89											
33415 00	Precious metals, n.s.k.....	1,000 short tons	1,000 short tons		1,000 short tons		1,000 short tons		1,000 short tons	1,000 short tons	
33397 --	Other primary nonferrous metals.....	(NA)	(NA)	325.7	(D)	(D)	(D)	(D)	(NA)	(NA)	
33416 --											
33397 21	Unalloyed:										
33416 51		Cadmium.....	(NA)	(NA)	17.8	(D)	(D)	(D)	(D)	(NA)	(NA)
33397 51		Nickel.....	(NA)	(NA)	0.7	(NA)	0.7	-	-	(NA)	(NA)
33416 69											
33397 61											
33416 71	Tin.....	(NA)	(NA)	12.8	(D)	(D)	(D)	(D)	(NA)	(NA)	
33397 71	Titanium sponge.....	(NA)	(NA)								
33416 81											
33397 11											
33416 61	Magnesium unalloyed.....	(NA)	(NA)	213.7	(D)	(D)	(D)	(D)	(NA)	(NA)	
33397 78	Other nonferrous metals, including metal bearing furnace residues and other metal products which have to be further refined before sale to customers										
33397 89											
33416 89											

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total production <sup>2</sup>  (gross weight)	Shipments including interplant transfers <sup>1</sup>						Shipments of products made from materials owned by others <sup>3</sup>  (gross weight)	Produced and consumed in the same plant in manufacture of other products  (gross weight)		
			Total		Shipments to all other companies		Transfers to other plants of the same company					
			Quantity (gross weight)	Value (million dollars)	Quantity (gross weight)	Value (million dollars)	Quantity (gross weight)	Value (million dollars)				
			1967									
3341- --	SECONDARY NONFERROUS METALS--Continued	1,000 troy ounces	1,000 troy ounces		1,000 troy ounces		1,000 troy ounces		1,000 troy ounces	1,000 troy ounces		
	Alloyed:											
33397 93	Nickel-base alloys.....	(NA)	(NA)	20.4	(D)	(D)	(D)	(D)	(NA)	(NA)		
33416 31												
33397 98	Other nonferrous metal alloys.....	}	(NA)	55.7	(D)	(D)	(D)	(D)	(NA)	(NA)		
33416 43												
33397 92	Magnesium-base alloys.....											
33416 21												
33397 00	Other nonferrous metals, n.s.k.....	(NA)	(X)	4.6	(X)	4.6	(X)	-	(NA)	(NA)		
33416 00												
33390 00	Primary nonferrous metals, n.e.c., (For companies with 10 or more employees. See Note.).....	(NA)	(X)	8.7	(X)	8.7	(X)	-	(NA)	(NA)		
33390 02	Primary nonferrous metals n.e.c., n.s.k. (for companies with fewer than 10 employees See Note.).....	(NA)	(X)	1.0	(X)	1.0	(X)	-	(NA)	(NA)		
33410 00	Secondary nonferrous metals, n.s.k..(For establishments with 10 employees or more. See Note.).....	(NA)	(X)	50.3	(X)	-	(X)	-	(NA)	(NA)		
33412 02	Secondary nonferrous metals, n.s.k. (For establishments with fewer than 10 employees. See Note.).....	(NA)	(X)	16.2	(X)	-	(X)	-	(NA)	(NA)		
			1963									
3341- --	SECONDARY NONFERROUS METALS, TOTAL.....	(X)	(X)	3,102.5	(D)	(D)	(D)	(D)	(X)	(X)		
33312 --	} Refined copper.....	(X)	(X)	668.6	(D)	(D)	(D)	(D)	(X)	(D)		
33412 --												
33312 --	Made by primary copper refiners (industry 3331).....	}	1,796.8	640.7	421.4	(D)	(D)	(D)	(D)	(X)	(X)	
33412 --	Made by secondary refiners (industry 3341) and other industries.....		(X)	(X)	247.2	(D)	(D)	(D)	(D)	(X)	(X)	
33312 11	Copper unalloyed.....	1,858.8	725.4	470.3	725.4	470.3	-	-	1,180.2	(D)		
33412 11												
33312 15	Copper-base alloys.....	290.4	305.3	196.8	(D)	(D)	(D)	(D)	3.6	(D)		
33412 31												
33312 00	Refined primary copper, n.s.k.....	(X)	(X)	1.5	(X)	148.8	(X)	-	(X)	(X)		
33323 --	} Refined lead.....	(X)	(X)	276.4	(X)	256.7	(X)	19.7	(D)	(D)		
33413 --												
33323 --	Made by primary lead refiners (industry 3332).....	(X)	(X)	74.5	(X)	(D)	(X)	(D)	(D)	(D)		
33413 --	Made by secondary refiners (industry 3341).....	(X)	(X)	191.4	(X)	(D)	(X)	(D)	(D)	(D)		
	All other industries.....	(X)	(X)	10.5	(X)	(D)	(X)	(D)	(D)	(D)		
33323 11	Refined unalloyed lead.....	629.8	443.7	98.5	421.7	93.7	22.0	4.8	(D)	(D)		
33413 11												
33323 11	Made in industry 3332.....	}	492.7	312.1	68.6	}	421.7	93.7	22.0	4.8	(D)	(D)
33413 11	All other industries.....		137.1	131.6	29.9							
	Made in industry 3341.....											
	Lead and tin-base alloys <sup>4</sup> .....	519.5	479.0	172.8	(D)	(D)	(D)	(D)	(D)	(D)	(D)	
	Made in industry 3332.....	}	519.5	479.0	172.8	(D)	(D)	(D)	(D)	(D)	(D)	
	Made in industry 3341.....											
	All other industries.....											
33323 31	Antimonial lead.....	329.3	306.7	72.7	265.2	62.7	41.5	10.1	18.5	(D)	(D)	
33413 21												
33323 33	Babbitt metal.....	14.4	13.4	9.2	(D)	(D)	(D)	(D)	(D)	(D)	(D)	
33413 33												
33323 51	Solder.....	102.3	100.9	69.8	(D)	(D)	(D)	(D)	1.1	(D)	(D)	
33413 51												
33323 71	Type metal.....	39.4	34.5	12.5	(D)	(D)	(D)	(D)	(D)	(D)	(D)	
33413 71												
33323 98	Other lead and tin-base alloys.....	34.2	23.4	8.7	(D)	(D)	(D)	(D)	(D)	(D)	(D)	
33413 98												
33323 00	Refined lead, n.s.k.....	(X)	(X)	5.1	(X)	5.1	(X)	-	(X)	(X)	(X)	
33413 00												

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total production <sup>2</sup>  (gross weight)	Shipments including interplant transfers <sup>1</sup>						Shipments of products made from materials owned by others <sup>3</sup>  (gross weight)	Produced and consumed in the same plant in manufacture of other products  (gross weight)	
			Total		Shipments to all other companies		Transfers to other plants of the same company				
			Quantity (gross weight)	Value (million dollars)	Quantity (gross weight)	Value (million dollars)	Quantity (gross weight)	Value (million dollars)			
			1963								
SECONDARY NONFERROUS METALS--Continued			(1,000 s. tons)	(1,000 s. tons)		(1,000 s. tons)		(1,000 s. tons)		(1,000 s. tons)	(1,000 s. tons)
33334 --	Refined zinc.....	1,263.0	1,129.7	273.7	1,092.9	265.2	36.7	8.6	75.4	96.5	
33414 01											
33334 --	Made by primary zinc refiners (industry 3333).....	1,079.3	975.0	230.3	1,092.9	265.2	36.7	8.6	75.4	96.5	
33414 --	Made by secondary refiners (industry 3341).....	183.7	154.7	43.5							
	All other industries.....										
Unalloyed zinc:											
33334 13	Zinc slab, including remelt zinc.....	971.7	864.6	202.0	836.6	195.4	28.0	6.6	46.5	(D)	
33414 01		Made in industry 3341.....		23.4	5.6						
33334 13	Made in industry 3333.....	971.7	841.2	196.4	836.6	195.4	28.0	6.6	46.5	(D)	
	All other industries.....										
33334 51	Zinc dust.....	43.1	44.5	12.9	(D)	(D)	(D)	(D)	(D)	(D)	
33414 05	Made in industry 3341.....	16.4	16.3	5.2	(D)	(D)	(D)	(D)	(D)	(D)	
33334 51	Made in industry 3333.....	26.7	28.2	7.7	(D)	(D)	(D)	(D)	(D)	(D)	
33334 61	Zinc-base alloys.....	248.2	220.6	58.8	(D)	(D)	(D)	(D)	(D)	(D)	
33414 11		Made in industry 3333.....	106.1	106.4	26.4	(D)	(D)	(D)	(D)	(D)	
33334 61	Made in industry 3341.....	142.1	114.2	32.4	(D)	(D)	(D)	(D)	(D)	(D)	
	All other industries.....										
33347 --	Aluminum ingot <sup>5</sup> .....	3,135.6	2,754.9	1,234.7	1,543.2	680.6	1,211.7	554.1	24.3	515.3	
33417 --											
33527 --											
33347 11	Made in primary aluminum industry (industry 3334).....	2,008.6	2,118.6	946.8	965.3	426.7	1,153.3	520.1	24.3	515.3	
33527 11	Made in aluminum rolling mills (industry 3352) <sup>5</sup> .....	562.0	86.2	49.0	577.9	253.9	58.4	34.0			
33417 11	Made in secondary nonferrous metals (industry 3341).....	565.1	540.5	230.7							
	All other industries.....		9.6	8.2							
33348 --	Aluminum extrusion billet <sup>5</sup> .....	604.4	414.0	185.5	290.8	126.8	123.3	58.7	43.7	223.5	
33528 --											
33418 --											
33348 11	Made in primary aluminum industry (industry 3334).....	254.5	272.1	123.8	193.6	86.2	78.5	36.6	-	-	
33528 11	Made in aluminum rolling mills (industry 3352) <sup>5</sup> .....	288.7	109.0	48.7	64.2	26.6	44.7	22.1	16.2	223.5	
33418 11	Made in secondary nonferrous metals industry (industry 3341).....	61.2	33.0	13.9	33.0	13.9	-	-	27.4	-	
	All other industries.....										
		1,000 troy ounces	1,000 troy ounces		1,000 troy ounces		1,000 troy ounces		1,000 troy ounces	1,000 troy ounces	
33395 --	Precious metals.....	(NA)	(NA)	246.4	(D)	(D)	(D)	(D)	(X)	(X)	
33415 --											
Unalloyed:											
33395 11	Gold.....	2,505.5	1,493.8	53.6	(D)	(D)	(D)	(D)	957.9	(D)	
33415 11											
33395 51	Silver.....	(NA)	(NA)	107.4	(D)	(D)	(D)	(D)	(NA)	(D)	
33415 31											
33395 31	Platinum including platinum-group metals.....	(NA)	(NA)	25.0	(D)	(D)	(D)	(D)	(NA)	(D)	
33415 51		Made in industry 3341.....	(NA)	(NA)	22.7	(D)	(D)	(D)	(D)	(NA)	-
	Made in primary nonferrous metals, n.e.c. industry (industry 3339) and other industries.....	(NA)	(NA)	2.3	(D)	(D)	(D)	(D)	(NA)	(D)	

See footnotes at end of table.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total production <sup>2</sup>  (gross weight)	Shipments including interplant transfers <sup>1</sup>						Shipments of products made from materials owned by others <sup>3</sup>  (gross weight)	Produced and consumed in the same plant in manufacture of other products (gross weight)
			Total		Shipments to all other companies		Transfers to other plants of the same company			
			Quantity (gross weight)	Value (million dollars)	Quantity (gross weight)	Value (million dollars)	Quantity (gross weight)	Value (million dollars)		
			1963							
	SECONDARY NONFERROUS METALS--Continued									
	Alloys:									
33395 61	Silver-base.....	(NA)	(NA)	60.4	(NA)	60.4	-	-	(NA)	(D)
33415 71										
33395 65										
33415 81										
33395 69	Other precious metal, including platinum-group.....	(NA)	(NA)	60.4	(NA)	60.4	-	-	(NA)	(D)
33415 89										
33415 00	Precious metals, n.s.k.....	1,000 short tons	1,000 short tons			1,000 short tons		1,000 short tons	1,000 short tons	
33397 --	Other nonferrous metals.....	(NA)	(NA)	193.0	(D)	(D)	(D)	(D)	(X)	(X)
33416 --										
	Unalloyed:									
33397 21	Cadmium.....	4.1	4.3	17.9	(D)	(D)	(D)	(D)	(D)	(D)
33416 51										
33397 11	Magnesium.....	80.7	56.8	39.5	(D)	(D)	(D)	(D)	-	(D)
33416 61										
33397 51	Nickel.....	1.5	1.1	1.7	1.1	1.7	-	-	-	-
33416 69										
33397 61	Tin.....	(NA)	(NA)	7.9	(D)	(D)	(D)	(D)	(D)	(D)
33416 71										
33397 71	Titanium sponge.....									
33416 81										
33397 79	Other unalloyed nonferrous metals, (including metal bearing furnace residues and other metal products which have to be further refined before sale to customers).....	(NA)	(NA)	85.0	(NA)	65.4	(NA)	19.5	(NA)	(NA)
33416 89										
	Alloyed:									
33397 92	Magnesium-base alloys.....	31.7	26.7	17.3	(D)	(D)	(D)	(D)	-	(D)
33416 21										
33397 93	Nickel-base alloys.....	3.8	3.7	10.7	3.7	10.7	-	-	(D)	-
33416 31										
33397 98	Other nonferrous metal alloys.....	(NA)	(NA)	7.7	(D)	(D)	(D)	(D)	-	-
33416 43										
33397 00	Other nonferrous metals, n.s.k.....	(X)	(X)	5.3	(NA)	5.3	-	-	(X)	(X)
33416 00										
33410 00	Refined nonferrous metals, n.s.k.....	(X)	(X)	24.2	(X)	24.2	-	-	(X)	(X)

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

Data on production, toll shipments, and produced and consumed in the same plant will be published in the final report for this industry.

- Represents zero. (D) Withheld to avoid disclosing figures for individual companies. (NA) Not available. n.e.c. Not elsewhere classified. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Includes shipments of these products produced on a toll basis by others. Where data are shown separately for the various industries producing these products, such shipments are included in the industry for the establishment owning the material. However, production data are included in the industry of the toll processor.

<sup>2</sup>Includes toll production.

<sup>3</sup>Includes shipments to other smelters and refiners, shipments to consumers and to some nonmanufacturing companies which sell direct to consumers.

<sup>4</sup>Includes shipments to other smelters and refiners, shipments to consumers and to some nonmanufacturing companies which sell direct to consumers.

<sup>5</sup>Most of the aluminum ingot and billet (alloys) produced by aluminum rolling mills represent duplication of tonnages reported by the primary aluminum industry in that the metal produced by the rolling mills is made from ingot produced in primary aluminum plants.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3341.--SECONDARY NONFERROUS METALS <sup>1</sup>					
	Materials, containers and supplies, total.....		(X)	1,009.1	(X)	676.6
333471	Aluminum ingot.....	Short tons.....	86.2	34.9	86.9	33.3
	Aluminum and aluminum-base alloy scrap (purchased scrap only):					
999809	From other establishments of the same company.....	...do.....	308.8	91.1	229.8	63.7
999810	From all other sources.....	...do.....	296.6	88.6	333.7	82.3
	Copper:					
333121	Refined unalloyed copper (cathodes, ingot, cakes, slabs, etc.)	...do.....	23.9	15.3	6.4	3.6
999812	Copper and copper-base alloy scrap (purchased scrap only etc.)	...do.....	380.2	238.5	357.5	159.0
	Lead:					
333233	Refined unalloyed lead.....	...do.....	51.5	14.9	122.9	26.5
999813	Lead and lead-base alloy scrap (purchased scrap only).....	...do.....	571.6	117.6	524.1	77.3
	Zinc:					
333341	Refined unalloyed zinc.....	...do.....	70.1	20.1	68.8	17.2
999814	Zinc and zinc-base alloy scrap (purchased scrap only).....	...do.....	93.4	17.1	81.8	11.5
	Tin:					
333976	Refined unalloyed tin.....	...do.....	35.8	45.9	13.6	31.2
999815	Tin plate scrap.....	...do.....			352.6	9.1
970099	All other items, components, parts, containers and supplies consumed.....		(X)	228.0	-	161.9
976000	All other materials, n.s.k.....		(X)	97.1	(X)	-

- Represents zero. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Smelting and refining establishments were instructed to include in their reports the quantity and cost of purchased materials which they processed or furnished to others for toll processing, but to exclude materials processed on a toll basis for others. Accordingly, the data shown in this table excludes considerable quantities of materials consumed by establishments in these industries in the production of products shown in table 3.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3341, these small establishments accounted for approximately 1 percent of payrolls and 2 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the month specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

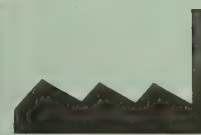
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-33D-1

## INDUSTRY SERIES

**preliminary  
report**

### Copper rolling and drawing SIC Code 3351

The Rolling, Drawing, and Extruding of Copper Industry includes establishments primarily engaged in rolling, drawing, and extruding copper, brass, bronze, and other copper-base alloy basic shapes, such as plate, sheet, strip, bar, and tubing. Establishments primarily engaged in recovering copper and its alloys from scrap or dross are classified in industry 3341.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Copper Rolling and Drawing Industry

amounted to \$2,390.7 million, an increase of 44 percent compared with 1963. Value added by manufacture at \$703.7 million in 1967 was 47 percent more than value added in 1963. Average employment in the industry showed an increase of 4 percent from 1963 to a total of 40.3 thousand employees in 1967.

Of the \$2,390.7 million total value of shipments and other receipts of establishments classified as copper rolling and drawing establishments, \$241.1 million were products primary to other industries; and \$105.9 million were receipts for miscellaneous activities. The industry shipments of primary products represented 89 percent of the total manufactured product shipments, pri-

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)	
	INDUSTRY 3351.—COPPER ROLLING AND DRAWING													
1967 Census....	126	108	40.3	294.0	32.3	63.6	219.1	703.7	1,658.7	2,390.7	68.0	276.5	89	93
1966 ASM <sup>1</sup> .....	(NA)	(NA)	40.9	314.3	33.3	72.0	244.1	897.9	1,985.7	2,846.3	59.9	303.5	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	39.5	285.3	32.0	67.8	218.9	617.4	1,647.1	2,254.0	44.5	238.3	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	39.5	273.6	31.9	67.3	210.4	525.9	1,387.4	1,923.5	34.5	221.4	(NA)	(NA)
1963 Census.....	112	92	38.9	260.3	31.5	65.7	200.2	478.4	1,188.5	1,657.5	43.5	218.4	90	91
1962 ASM <sup>1</sup> .....	(NA)	(NA)	41.2	269.6	32.4	67.2	192.2	476.7	1,177.3	1,654.4	39.4	207.8	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	39.4	250.1	30.9	62.9	175.1	473.5	1,017.5	1,479.6	*26.4	194.4	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	39.6	237.4	31.8	63.0	165.3	452.5	994.8	1,416.9	17.4	181.3	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	43.1	260.1	34.6	72.5	199.0	553.9	1,092.2	1,639.3	25.3	191.2	(NA)	(NA)
1958 Census <sup>2</sup> ....	105	89	40.3	222.3	31.8	63.3	165.4	445.4	775.6	1,209.9	44.1	182.3	88	94

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary  
Rocco C. Siciliano, Under Secretary  
**BUREAU OF THE CENSUS** George Hay Brown, Director

mary and secondary. This percent, called the specialization ratio for the industry, was 90 percent in 1963.

The total value of rolled and drawn copper products shipped by all producers in 1967 was \$2,195.7 million of which \$2,043.7 million, or 93 percent, were shipped by plants classified in industry 3351, Copper Rolling and Drawing, while the remainder was shipped by plants classified in

other industries. This percent, called the coverage ratio, was 91 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3351, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

BDSAF 84, Copper Base Mill and Foundry Products.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3351.--COPPER ROLLING AND DRAWING												
United States, total.....	126	108	40.3	294.0	32.3	63.6	219.1	703.7	1,658.7	2,390.7	68.0	38.9	478.4
New England.....	35	31	11.6	88.0	9.1	17.5	64.3	186.4	385.7	582.7	17.7	12.1	145.2
Connecticut.....	27	24	10.0	77.1	7.9	15.1	56.3	163.1	357.8	531.7	17.0	10.4	126.9
Middle Atlantic.....	38	30	11.2	79.2	8.9	17.5	57.7	191.1	511.8	708.5	22.9	10.4	126.7
New York.....	10	7	3.6	21.9	2.8	4.6	15.9	59.9	160.3	222.8	(D)	3.5	45.9
New Jersey.....	13	11	3.0	23.7	2.5	5.2	18.4	52.5	219.1	275.4	(D)	3.0	29.4
Pennsylvania.....	15	12	4.6	33.6	3.5	7.6	23.5	78.7	132.3	210.3	(D)	3.9	51.5
North Central.....	38	34	13.6	99.4	11.1	22.2	76.4	254.1	602.9	866.9	24.3	(D)	(D)
Ohio.....	9	8	2.3	16.6	1.9	3.8	12.7	36.9	86.5	125.8	(D)	2.8	34.3
Illinois.....	8	7	4.5	33.7	3.4	7.1	24.5	81.6	192.4	277.5	6.6	3.7	33.4
Michigan.....	13	13	3.9	28.9	3.3	6.9	23.4	78.4	148.9	228.7	2.0	4.1	58.4
West:													
California.....	7	5	1.2	8.9	1.0	1.8	6.5	21.1	33.7	56.5	0.8	1.3	16.0

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers <sup>1</sup>		Commercial shipments		Interplant transfers		Shipments of products manufactured from materials owned by others  (1,000 short tons)
		Quantity	Value	Quantity	Value	Quantity	Value	
		(1,000 short tons)	(million dollars)	(1,000 short tons)	(million dollars)	(1,000 short tons)	(million dollars)	
1967								
3351- --	ROLLED AND DRAWN COPPER, TOTAL <sup>2</sup> .....	(NA)	2,195.7	(NA)	1,811.8	(X)	383.9	338.8
33511 --	Copper and copper-base alloy wire (bare and tinned) for purposes other than electrical transmission.....	62.9	93.9	58.6	87.6	4.3	6.3	1.7
33511 11	Unalloyed.....	10.9	15.4	10.9	15.4	-	-	1.7
33511 31	Alloyed.....	52.0	78.5	47.7	72.2	4.3	6.3	
33512 --	Rolled, drawn and extruded copper and copper-base alloy mill products.....	(NA)	2,096.3	(NA)	1,718.7	(X)	377.6	337.1
Copper, unalloyed mill shapes:								
33512 11	Rod, bar, and shapes.....	444.2	398.4	234.3	216.0	209.9	182.4	253.0
33512 13	Flat products (sheet, strip, plate, etc.).....	107.6	143.6	(D)	(D)	(D)	(D)	15.9
33512 16	Pipe and tube, plumbing.....	191.7	268.7	184.3	258.4	7.4	10.3	-
33512 18	Other pipe and tube.....	124.3	197.5	73.0	185.8	8.3	11.7	2.4
Copper-base alloy mill shapes:								
33512 32	Rod, bar, and shapes.....	389.0	352.3	281.9	252.2	107.1	100.1	24.8
33512 35	Flat products (sheet, strip, plates), including military cups and disks.....	421.8	508.9	355.4	449.4	66.4	59.5	41.0
33512 36	Pipe and tube, plumbing.....	60.2	81.7	(D)	(D)	(D)	(D)	
33512 38	Other pipe and tube.....	88.7	140.1	(D)	(D)	(D)	(D)	
33512 00	Rolled drawn and extruded copper and copper-base alloy mill products n.s.k.....	(NA)	5.1	(NA)	5.1	-	-	-
33510 00	Rolled and drawn copper n.s.k. (Represents principally establishment with 10 or more employees in 1967. See Note.).....	(X)	4.7	(X)	4.7	-	-	-
33510 02	Rolled and drawn copper n.s.k. (Represents principally establishments with fewer than 10 employees in 1967. See Note.).....	(X)	0.8	(X)	0.8	-	-	-
1963								
3351- --	ROLLED AND DRAWN COPPER, TOTAL <sup>2</sup> .....	(NA)	1,544.5	(NA)	1,230.4	(NA)	314.1	(D)
33511 --	Copper and copper-base alloy wire (bare and tinned) for purposes other than electrical transmission.....	67.9	73.2	63.4	68.4	4.5	4.8	(D)
33511 11	Unalloyed.....	13.0	13.1	63.4	68.4	4.5	4.8	(D)
33511 31	Alloyed.....	54.9	60.1					
33512 --	Rolled, drawn and extruded copper and copper-base alloy mill products.....	(NA)	1,471.4	(NA)	1,162.0	(NA)	309.3	207.9
Copper, unalloyed mill shapes:								
33512 11	Rod, bar, and shapes.....	r 461.7	r 321.9	192.3	141.9	r 269.4	r 180.0	164.1
33512 13	Flat products (sheet, strip, plate, etc.).....	122.6	122.4	118.8	119.1	3.8	3.2	8.7
33512 16	Pipe and tube, plumbing.....	235.0	245.7	225.7	235.5	9.3	10.2	1.9
33512 18	Other pipe and tube.....	136.6	147.1	132.5	143.3	4.1	3.9	
Copper-base alloy mill shapes:								
33512 32	Rod, bar, and shapes.....	r 309.7	r 225.7	211.1	160.6	r 98.7	r 65.1	32.9
33512 35	Flat products (sheet, strip, plate), including military cups and disks.....	308.9	303.8	260.4	263.3	48.4	40.5	
33512 36	Pipe and tube, plumbing.....	15.5	19.5	15.5	19.4	0.1	(Z)	
33512 38	Other pipe and tube.....	66.5	82.3	59.8	76.0	6.6	6.3	
33512 00	Rolled drawn and extruded copper and copper-base alloy mill products n.s.k.....	(NA)	3.0	(NA)	3.0	-	-	-

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

- Represents zero. (D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or from related figures. (NA) Not available. n.s.k. Not specified by kind. Revised. (X) Not applicable.

<sup>1</sup>Includes shipments of these products produced on a toll basis by others.

<sup>2</sup>Data are also shown in Current Industrial Report Series BDSAF-84, Shipments of Copper-Base Mill and Foundry Products.



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Total		Establishments with casting department		Establishments without casting department			
		Quantity (1,000 short tons)	Delivered cost (million dollars)	Quantity (1,000 short tons)	Delivered cost (million dollars)	Quantity (1,000 short tons)	Delivered cost (million dollars)		
		1967							
	INDUSTRY 3351.--COPPER ROLLING AND DRAWING								
	Materials, containers, and supplies, total.....	(X)	1,587.4	(2)	(2)	(2)	(2)		
	Nonferrous metals and alloys (ingot, pig, shot, etc.):								
333404	Aluminum, unalloyed.....	}	71.5					35.3	
333405	Aluminum-base alloys.....								
333121	Copper, unalloyed (cathodes, ingot, cakes, slabs, etc.).....		801.8					673.8	
333113	Copper-base alloy raw materials (ingot billets, shot, waffle, hardeners, etc.).....		202.1					188.1	
333232	Lead and lead-base alloys.....		3.1					0.9	
333973	Magnesium and magnesium-base alloys.....		0.2					0.2	
333971	Nickel and nickel-base alloys.....		6.7					12.3	
333348	Zinc and zinc-base alloys.....		94.4					28.0	
333909	Other nonferrous metals and alloys.....		2.8					6.6	
	Nonferrous metal scrap (excluding home scrap):								
	Aluminum and aluminum-base alloy:								
999809	From other establishments of the same company.....	}	47.2					21.0	
999810	From other sources, excluding home scrap.....								
999812	Copper and copper-base alloy.....		474.5	334.6					
999814	Zinc and zinc-base alloy, including drosses and skimming.....		(4)	(4)					
335200	Aluminum and aluminum-base alloy mill shapes (rod, bar, sheets, etc.).....		(4)	(4)					
335100	Brass mill shapes (rod, bar, sheet, etc.).....		66.6	61.3					
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	175.1					
976000	Materials, parts, containers, and supplies, n.s.k. <sup>5</sup> .....		(X)	50.2					
		1963							
	Materials, containers, and supplies, total.....	(X)	1,120.6	(X)	652.9	(X)	467.7		
	Nonferrous metals and alloys (ingot, pig, shot, etc.):								
333404	Aluminum, unalloyed.....	}	31.5	13.4	}	17.4	7.9	32.7	14.0
333405	Aluminum-base alloys.....			18.5		8.6			
333121	Copper, unalloyed (cathodes, ingot, cakes, slabs, etc.).....		839.0	527.6		512.6	323.0	326.4	204.6
333113	Copper-base alloy raw materials (ingot billets, shot, waffle, hardeners, etc.).....		224.0	132.7		86.9	48.6	137.1	84.1
333232	Lead and lead-base alloys.....		3.3	0.8		2.2	0.5	1.1	0.3
333973	Magnesium and magnesium-base alloys.....		(4)	(4)		(4)	(4)	(4)	(4)
333971	Nickel and nickel-base alloys.....		7.0	11.5		5.3	7.0	1.8	4.5
333348	Zinc and zinc-base alloys.....		100.9	24.9		78.4	19.4	22.5	5.4
333909	Other nonferrous metals and alloys.....		(NA)	11.9		(NA)	4.3	(NA)	7.6
	Nonferrous metal scrap (excluding home scrap):								
	Aluminum and aluminum-base alloy:								
999809	From other establishments of the same company.....	}	6.3	2.8	}	(4)	(4)	(4)	(4)
999810	From other sources, excluding home scrap.....								
999812	Copper and copper-base alloy.....		380.2	189.3		290.0	145.9	90.1	43.4
999814	Zinc and zinc-base alloy, including drosses and skimming.....		(4)	(4)		(4)	(4)	(4)	(4)
335200	Aluminum and aluminum-base alloy mill shapes (rod, bar, sheet, etc.).....		23.7	13.9		(4)	(4)	(4)	(4)
335100	Brass mill shapes (rod, bar, sheet, etc.).....		79.4	55.6		48.9	32.0	30.4	23.7
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	83.0		(X)	52.6	(X)	47.1
976000	Materials, parts, containers, and supplies, n.s.k. <sup>5</sup> .....		(X)	44.6		(X)	11.7	(X)	32.9

(X) Not applicable. (NA) Not available. n.s.k. Not specified by kind.

<sup>1</sup>Data exclude tonnages of copper materials processed on a toll basis. Most of the material involved in toll processing is owned by establishments classified in other industries, principally industry 3357, Nonferrous Wire Drawing, etc. As table 3 shows unalloyed copper rod, bar, and shapes (product code 3351211) is, by far, the most important mill product produced on a toll basis.

<sup>2</sup>Data on materials consumed by subindustry for 1967 will be published in the final report for this industry.

<sup>3</sup>The subindustry separation for this industry is based on the presence or lack of presence of the department described as "casting (except foundry)."

<sup>4</sup>Included with material code 970099, "all other materials and components, parts, containers, and supplies, consumed." To avoid disclosing operations of individual companies.

<sup>5</sup>Standard n.s.k. footnote.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3351, these small establishments accounted for less than 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-33D-2

## INDUSTRY SERIES

### Aluminum rolling and drawing

**preliminary  
report**

SIC Code 3352

The Rolling, Drawing, and Extruding of Aluminum, Industry includes establishments primarily engaged in rolling, drawing and extruding aluminum and aluminum base alloy basic shapes such as plate, sheet, strip, bar, tubing and foil.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classi-

fied in the Aluminum Rolling and Drawing Industry amounted to \$2,952.8 million, an increase of 34 percent compared with 1963. Value added by manufacture at \$936.5 million in 1967 was 30 percent more than value added in 1963. Average employment in the industry showed an increase of 13 percent from 1963 to a total of 61.3 thousand employees in 1967.

Of the \$2,952.8 million total value of shipments and other receipts of establishments classified as aluminum rolling and drawing, \$196.2 million were products primary to other industries; and \$131.4 million were receipts for miscel-

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)
INDUSTRY 3352.--ALUMINUM ROLLING AND DRAWING														
1967 Census....	216	162	61.3	477.6	48.6	100.7	353.6	936.5	2,054.2	2,952.8	146.0	605.1	93	94
1966 ASM <sup>1</sup> .....	(NA)	(NA)	63.4	491.9	50.7	109.4	374.2	861.6	2,280.5	3,099.8	126.4	609.6	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	57.6	430.2	45.5	98.2	323.7	711.5	1,908.2	2,597.4	140.8	550.9	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	56.1	393.5	44.2	93.6	292.7	656.4	1,651.2	2,297.2	72.2	527.9	(NA)	(NA)
1963 Census....	212	153	54.3	376.6	42.7	89.9	278.5	721.2	1,524.8	2,196.4	81.3	511.9	85	93
1962 ASM <sup>1</sup> .....	(NA)	(NA)	54.4	343.6	42.8	89.6	252.8	611.2	1,423.5	2,016.6	76.6	455.8	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	52.1	321.3	40.7	86.3	233.5	564.6	1,338.3	1,881.7	60.0	431.3	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	52.6	310.5	40.9	86.1	224.0	536.8	1,230.2	1,737.7	76.1	420.4	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	55.4	323.4	44.3	93.9	239.7	615.2	1,366.5	1,939.6	81.0	393.1	(NA)	(NA)
1958 Census <sup>2</sup> ...	185	129	46.9	272.2	36.4	75.3	199.6	537.1	1,057.4	1,562.4	131.8	341.5	91	92

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued January 1970

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

Harold C. Passer, Assistant Secretary for Economic Affairs

BUREAU OF THE CENSUS George Hay Brown, Director



laneous activities. The industry shipments of primary products represented 93 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 85 percent in 1963.

The total value of aluminum rolling and drawing shipped by all producers in 1967 was \$2,778.6 million of which \$2,625.2 million, or 94 percent, were shipped by plants classified in industry 3352, Aluminum Rolling and Drawing,

while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 93 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

#### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3352, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

M33-2, Aluminum Ingot and Mill Products.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967										1963		
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
	INDUSTRY 3352.--ALUMINUM ROLLING AND DRAWING												
United States, total.....	216	162	61.3	477.6	48.6	100.7	353.6	936.5	2,054.2	2,952.8	146.0	54.3	721.2
New England.....	11	9	0.6	3.6	0.5	1.0	2.7	8.1	14.5	22.5	1.8	0.5	7.3
Middle Atlantic.....	33	23	7.0	54.3	5.3	10.9	36.2	103.2	285.7	388.7	29.8	9.1	119.5
New Jersey.....	9	5	0.8	5.9	0.6	1.3	3.8	4.9	18.4	26.6	0.3	2.1	30.8
North Central.....	81	67	21.1	170.3	16.1	34.0	121.1	330.5	744.8	1,052.2	48.3	17.5	246.1
Ohio.....	24	21	4.8	37.0	3.7	7.4	25.7	81.8	203.3	279.1	7.0	4.2	56.2
Michigan.....	18	14	2.7	19.3	2.1	4.3	13.0	33.9	49.5	83.9	1.7	2.4	22.6
South.....	57	42	20.3	150.6	16.8	33.7	117.9	290.8	717.3	994.2	40.4	17.3	235.8
West South Central..	13	9	1.7	9.2	1.2	2.7	6.0	19.8	39.0	59.0	4.8	1.1	10.9
West.....	34	21	12.3	98.8	9.9	21.1	75.6	203.9	291.8	495.3	25.6	9.7	112.5
California.....	28	16	7.5	60.2	5.9	13.4	45.3	131.7	158.2	292.2	16.9	5.6	70.9

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Production <sup>2</sup>	Total shipments including interplant transfers <sup>1</sup>		Commercial shipments		Interplant transfers		Produced and consumed in the same plant in the manufacture of other products <sup>2</sup>	Shipments of products manufactured from materials owned by others <sup>2</sup>
			Quantity	Value	Quantity	Value	Quantity	Value		
			(1,000 short tons)	(1,000 short tons)	(million dollars)	(1,000 short tons)	(million dollars)	(1,000 short tons)		
			1967							
3352- --	ROLLED AND DRAWN ALUMINUM, TOTAL <sup>3</sup> .....	(NA)	(X)	2,778.6	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
33521 --	Aluminum and aluminum-base alloy wire and cable (including ACSR) <sup>3</sup> .....	(NA)	334.2	250.4	315.5	233.7	18.7	16.7	(NA)	(NA)
33571 --										
33521 --	Made in industry 3352 (aluminum rolling and rolling and drawing).....	(NA)	90.8	75.0	85.0	69.0	5.8	6.0	(NA)	(NA)
33571 --	Made in industry 3357 (nonferrous wire drawing, etc.) and other industries.....	(NA)	243.4	175.4	230.3	164.7	13.1	10.7	(NA)	(NA)
33521 11	Bare wire for electrical transmission.....	(NA)	54.7	57.8	46.1	50.2	8.6	7.6	(NA)	(NA)
33571 11										
33521 11	Made in industry 3352 (aluminum rolling and drawing).....	(NA)	} 54.7	57.8	{ 46.1	50.2	8.6	7.6	(NA)	(NA)
33571 11	Made in industry 3357 (nonferrous wire drawing, etc.) and other industries.....	(NA)								
33521 51	Bare wire for other than electrical transmission.....	(NA)	26.7	36.4	} 206.3	143.6	6.7	6.7	}	(NA)
33571 51										
33521 51	Made in industry 3352 (aluminum rolling and drawing).....	(NA)	17.1	26.0						
33571 51	Made in industry 3357 (nonferrous wire drawing, etc.) and other industries.....	(NA)	9.6	10.4						
33521 62	Aluminum cable-steel reinforced (ACSR) (gross weight).....	(NA)	4186.3	113.9	}				(NA)	(NA)
33571 61										
33521 62	Made in industry 3352 (aluminum rolling and drawing).....	(NA)	32.2	21.3	}					
33571 61	Made in industry 3357 (nonferrous wire drawing, etc.) and other industries.....	(NA)	154.1	92.6						
33521 69	Other aluminum cable, bare.....	(NA)	466.5	42.3	62.9	39.9	3.6	2.4	{ }	
33571 65										

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product		Total shipments including interplant transfers <sup>1</sup>		Commercial shipments		Interplant transfers		Produced and consumed in the same plant in the manufacture of other products <sup>2</sup>	Shipments of products manufactured from materials owned by others <sup>3</sup>
		Production <sup>2</sup>	Quantity	Value	Quantity	Value	Quantity	Value		
		(1,000 short tons)	(1,000 short tons)	(million dollars)	(1,000 short tons)	(million dollars)	(1,000 short tons)	(million dollars)		
		1967--Continued								
	ROLLED AND DRAWN ALUMINUM--Continued									
33521 69	Made in industry 3352 (aluminum rolling and drawing).....	(NA)	66.5	42.3	62.9	39.9	3.6	2.4	(NA)	(NA)
33571 65	Made in industry 3357 (nonferrous wire drawing, etc.) and other industries.....	(NA)								
33522 --	Aluminum plate and sheet (including foil stock).....	(NA)	(X)	1,226.9	(X)	896.4	(X)	330.5	(NA)	(NA)
33522 13	Plate, heat-treatable.....	(NA)	88.0	109.4	66.4	90.9	21.6	18.5	(NA)	(NA)
33522 15	Plate, nonheat-treatable.....	(NA)	76.3	71.2	59.0	49.9	17.3	21.3	(NA)	(NA)
	Sheet:									
33522 23	Flat, heat-treatable.....	(NA)	99.9	96.6	83.8	81.8	16.1	14.8	(NA)	(NA)
33522 24	Flat, nonheat-treatable, bare.....	(NA)	194.0	150.3	157.9	122.2	36.1	28.1	(NA)	(NA)
33522 26	Flat, nonheat-treatable, precoated <sup>5</sup> .....	(NA)	30.8	24.4	24.8	15.8	6.0	8.6	(NA)	(NA)
33522 27	Coiled, heat-treatable.....	(NA)	33.7	32.7	27.3	28.4	6.4	4.3	(NA)	(NA)
33522 31	Coiled, nonheat-treatable, bare.....	(NA)	951.9	668.4	669.6	442.9	282.3	225.5	(NA)	(NA)
33522 33	Coiled, nonheat-treatable, precoated <sup>5</sup> .....	(NA)	80.8	68.6	67.9	59.2	12.9	9.4	(NA)	(NA)
33522 00	Aluminum plate and sheet, n.s.k.....	(NA)	(X)	5.3	(X)	5.3	-	-	(NA)	(NA)
33523 51	Plain aluminum foil.....	(NA)	<sup>6</sup> 146.5	183.5	111.1	134.7	35.4	48.8	(NA)	(NA)
33524 --	Rolled aluminum rod, bar (including continuous cast) and structural shapes.....	(NA)	346.0	257.6	73.5	48.9	272.5	208.7	(NA)	(NA)
33524 21	Rod and bar, rolled.....	(NA)	346.0	257.6	73.5	48.9	272.5	208.7	(NA)	(NA)
33524 25	Rod and bar, continuous cast.....	(NA)								
33524 31	Rolled structural shapes.....	(NA)								
33524 00	Rolled aluminum rod, bar, and shapes, n.s.k.....	(NA)								
33525 --	Extruded aluminum rod, bar, and other extruded shapes, except tube.....	(NA)	(X)	563.0	(X)	517.6	(X)	45.4	(NA)	(NA)
33525 15	Extruded rod and bar:	(NA)	20.1	19.6	29.1	33.1	8.5	7.2	(NA)	(NA)
33525 18	Alloys other than 2,000 and 7,000 series..	(NA)	17.5	20.7						
33525 25	Alloys in 2,000 and 7,000 series.....	(NA)	531.5	460.9	508.5	469.5	52.1	38.2	(NA)	(NA)
33525 28	Alloys other than 2,000 and 7,000 series..	(NA)	29.1	46.8						
33525 00	Other extruded shapes, except tube:									
33525 00	Alloys other than 2,000 and 7,000 series..	(NA)	531.5	460.9	508.5	469.5	52.1	38.2	(NA)	(NA)
33525 00	Alloys in 2,000 and 7,000 series.....	(NA)	29.1	46.8						
33525 00	Extruded rod, bar, and other extruded shapes, except tube, n.s.k.....	(NA)	(X)	15.0	(X)	15.0	-	-	(NA)	(NA)
33526 --	Aluminum tube.....	(NA)	(X)	172.2	(X)	154.5	(X)	17.7	(NA)	(NA)
33526 51	Extruded.....	(NA)	74.5	70.8	134.7	141.2	7.8	17.7	(NA)	(NA)
33526 53	Drawn.....	(NA)	44.4	67.8						
33526 55	Welded.....	(NA)	23.6	20.3						
33526 00	Aluminum tube, n.s.k.....	(NA)	(X)	13.3						
33527 11	Aluminum ingot <sup>6 7 8</sup> .....	(NA)	<sup>9</sup> 81.1	<sup>9</sup> 51.7	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
33528 11	Aluminum extrusion billet <sup>6 7 8</sup> .....	(NA)	57.0	30.4	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
33520 00	Aluminum rolling and drawing, n.s.k. (For establishments principally with 10 or more employees in 1967. See Note.).....	(X)	(X)	41.0	(X)	41.0	-	-	(NA)	(NA)
33520 02	Aluminum rolling and drawing, n.s.k. (For establishments with fewer than 10 employees in 1967. See Note.).....	(X)	(X)	1.9	(X)	1.9	-	-	(NA)	(NA)

See footnotes at end of table.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Production	Total shipments including interplant transfers <sup>1</sup>		Commercial shipments		Interplant transfers		Shipments of products manufactured from materials owned by others <sup>2</sup>
			Quantity	Value	Quantity	Value	Quantity	Value	
			(1,000 short tons)	(million dollars)	(1,000 short tons)	(million dollars)	(1,000 short tons)	(million dollars)	
1963									
3352- --	ROLLED AND DRAWN ALUMINUM, TOTAL <sup>3</sup> .....	(NA)	(X)	1,898.9	(X)	(X)	(X)	(X)	(X)
33521 --	Aluminum and aluminum-base alloy wire (including ACSR).....	(NA)	191.8	127.9	180.8	118.8	11.0	9.1	(D)
33521 --	Made in aluminum rolling mills (SIC 3352)...	(NA)	81.1	56.9	75.2	51.4	5.9	5.5	(D)
33571 --	Made in nonferrous wire drawing (SIC 3357) and other industries.....	(NA)	110.7	71.0	105.6	67.4	5.1	3.6	-
33521 11 33571 11	Bare wire, conductor.....	(NA)	19.5	11.6	15.1	8.1	4.4	3.5	-
33521 11 33571 11	Made in aluminum rolling mills.....	(NA)	6.2	4.2	15.1	8.1	4.4	3.5	{ - -
	Made in nonferrous wire drawing and other industries.....	(NA)	13.2	7.4					
33521 51 33571 51	Bare wire, other than conductor.....	(NA)	23.2	23.8	19.4	19.8	3.8	4.0	(D)
33521 51 33571 51	Made in aluminum rolling mills.....	(NA)	17.7	18.1	19.4	19.8	3.8	4.0	{ (D) -
	Made in nonferrous wire drawing and other industries.....	(NA)	5.6	5.6					
33521 62 33571 61 33521 69 33571 65	Aluminum cable steel reinforced (ACSR).....	(NA)	<sup>4</sup> 130.4	81.3	146.3	90.9	2.8	1.7	-
	Other aluminum cable, bare.....	(NA)	<sup>4</sup> 18.7	11.3					
33522 --	Aluminum plate and sheet (including foil stock)	(NA)	(X)	850.5	(X)	714.4	(X)	136.1	{  <

Footnotes continued on next page.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

FOOTNOTES FOR TABLE 3 INDUSTRY--3352

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

-Represents zero. (D) Withheld to avoid disclosing figures of individual companies. In some cases, figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher level totals or from related figures. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Includes shipments of these products produced on a toll basis by others.

<sup>2</sup>1967 data on production, produced and consumed in the same establishment and toll shipments will be published in the final report for this industry.

<sup>3</sup>Data are also published in Current Industrial Reports Series M33-2 Aluminum Ingot and Mill Products.

<sup>4</sup>Data for ACSR and aluminum cable, bare, are also published monthly in Current Industrial Reports Series M33-2, Aluminum Ingot and Mill Products. Net quantity of shipments as reported in this series for the year 1967 and 1963 totaled 253.1 and 136.2 thousand short tons, respectively.

<sup>5</sup>Includes only permanent finishes such as enameling and vinyl coating. Excludes those coatings which are applied only for temporary protection.

<sup>6</sup>Differs from quantity data published in Current Industrial Reports Series M33-2, Aluminum Ingot and Mill Products, in that no data are included in the plain aluminum foil figures for that quantity of plain foil which is produced and converted in the same establishment. As shown in the Current Industrial Reports, net shipments of aluminum foil totaled 224.7 thousand short tons in 1967 and 161.2 thousand short tons in 1963.

<sup>7</sup>Represents aluminum ingot and extrusion billet made only by establishments classified in industry 3352, Aluminum Rolling and Drawing. Comparable shipments for plants classified in industries 3334 Primary Aluminum and 3341, Secondary Nonferrous Metals, and other industries are as follows:

Item	Total shipments		Other companies		Interplant transfers	
	Quantity (1,000 short tons)	Value (million dollars)	Quantity (1,000 short tons)	Value (million dollars)	Quantity (1,000 short tons)	Value (million dollars)
1967						
Aluminum ingot:						
Industry 3334.....	2,767.2	1,332.4	1,168.3	587.3	1,598.9	745.1
Industry 3341 and other industries.....	623.5	281.5	(NA)	(NA)	(NA)	(NA)
Aluminum extrusion billet:						
Industry 3334.....	486.7	226.8	311.3	124.8	175.4	102.0
Industry 3341 and other industries.....	34.9	39.3	(NA)	(NA)	(NA)	(NA)
1963						
Aluminum ingot:						
Industry 3334.....	2,118.6	946.8	965.3	426.7	1,153.3	520.1
Industry 3341.....	540.5	230.7				
All other industries.....	9.6	8.2				
Aluminum extrusion billet:						
Industry 3334.....	272.1	122.8	193.6	86.2	78.5	36.6
Industry 3341.....	33.0	13.9	33.0	13.9	-	-
All other industries.....						

<sup>8</sup>Most of the aluminum ingot and billet (alloys) produced by aluminum rolling mills represent duplication of tonnages reported by the primary aluminum industry in that metal produced by the rolling mills is made from ingot produced in primary aluminum plants.

<sup>9</sup>Includes revisions to data previously published in SIC 3334 Primary Aluminum and SIC 3341 Secondary Nonferrous Metals.

1967 CENSUS OF MANUFACTURES  
TABLE 4. **Materials Consumed, by Kind: 1967 and 1963**

(See appendix, "Explanation of Terms")

Code	Material	1967		1963	
		Quantity (1,000 short tons)	Delivered cost (million dollars)	Quantity (1,000 short tons)	Delivered cost (million dollars)
	INDUSTRY 3352.--ALUMINUM ROLLING AND DRAWING <sup>1</sup>				
	Materials, containers, and supplies, total.....	(X)	1,895.7	(X)	1,414.6
	Nonferrous metals and alloys (ingot, pig, shot, etc.):				
333404	Aluminum, unalloyed.....	1,342.7	639.3	1,032.7	466.2
333405	Aluminum-base alloys.....	1,498.2	767.2	1,029.1	518.9
333121	Copper, unalloyed (cathodes, ingot, cakes, slabs, etc.).....	( <sup>2</sup> )	( <sup>2</sup> )		
333113	Copper-base alloy raw materials (ingots, billets, shot, waffle, hardeners, etc.)..	( <sup>2</sup> )	( <sup>2</sup> )	22.4	13.2
333232	Lead and lead-base alloys.....	( <sup>2</sup> )	( <sup>2</sup> )	2.5	1.0
333973	Magnesium and magnesium-base alloys.....	31.3	20.2	15.3	10.8
333971	Nickel and nickel-base alloys.....	( <sup>2</sup> )	( <sup>2</sup> )	(NA)	(NA)
333348	Zinc and zinc-base alloys.....	(NA)	1.6	3.5	1.3
333909	Other nonferrous metals and alloys.....	18.7	8.0	(NA)	4.3
	Nonferrous mill shapes:				
335200	Aluminum and aluminum-base alloy mill shapes.....	145.3	89.7	143.4	90.2
335100	Brass mill shapes (rod, bar, sheet, etc.).....	(NA)	1.5	6.8	6.8
	Nonferrous metal scrap (except home scrap):				
	Aluminum and aluminum-base alloy:				
999809	From other establishments of the same company.....	144.7	62.7	102.0	25.6
999810	From other sources.....	104.4	43.2	104.0	39.9
999812	Copper and copper-base alloy.....	6.4	4.3	11.6	5.8
999814	Zinc and zinc-base alloy.....	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
970099	All other materials and components, parts, containers, and supplies consumed.....	(X)	212.5	(X)	167.6
976000	Materials, containers, parts and supplies, n.s.k. <sup>2</sup> .....	(X)	45.5	(X)	63.1

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Data exclude tonnages of nonferrous materials processed on a toll basis.

<sup>2</sup>Included with material code 970099 "all other materials, components, parts, etc. to avoid disclosing operations of individual companies.

<sup>3</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3352, these small establishments accounted for approximately 0.1 percent of payrolls and 0.1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.

# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

**Textile mill products • Apparel and leather • Chemicals, rubber, and plastics • Machinery and equipment • Primary metals • Intermediate metal products • Processed foods • Lumber, furniture, and paper products • Stone, clay, and glass products.**

A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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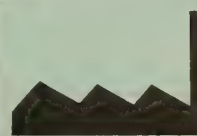
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POSTAGE AND FEES  
U.S. DEPARTMENT OF COMM

OFFICIAL BUSINESS



# 1967 CENSUS OF MANUFACTURES



MC67(P)-33D-3

## INDUSTRY SERIES

**preliminary  
report**

### Nonferrous rolling and drawing, n.e.c.

SIC Code 3356

The Rolling, Drawing, and Extruding of Nonferrous Metals, Except Copper and Aluminum, Industry includes establishments primarily engaged in rolling, drawing, and extruding nonferrous metals other than copper (industry 3351), and aluminum (industry 3352). The products of this industry are produced in the form of basic shapes, such as plate, sheet, strip, bar, and tubing. Establishments primarily engaged in recovering nonferrous and alloys from scrap or dross are classified in industry 3341; in manufacturing gold, silver, tin, and other foils except aluminum, in industry 3497; and aluminum foil in industry 3352.

the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Nonferrous Rolling and Drawing, N.E.C., Industry amounted to \$969.2 million, an increase of 51 percent compared with 1963. Value added by manufacture at \$346.5 million in 1967 was 38 percent more than value added in 1963. Average employment in the industry showed an increase of 20 percent from 1963 to a total of 20,9 thousand employees in 1967.

The classification of establishments for which data are tabulated in this report is based upon

Of the \$969.2 million total value of shipments and other receipts of establishments classified as rolled, drawn, and extruded nonferrous metals,

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3356.--NONFERROUS ROLLING AND DRAWING, N.E.C.														
1967 Census....	139	72	20.9	159.6	14.6	30.2	97.7	346.5	626.6	969.2	57.1	257.3	89	85
1966 ASM <sup>1</sup> .....	(NA)	(NA)	21.3	166.3	15.1	32.4	103.9	380.1	694.2	1,051.1	47.7	272.7	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	18.3	135.3	12.8	27.7	84.1	291.3	551.0	817.1	39.7	229.8	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	17.3	123.8	12.0	25.6	76.1	252.5	443.5	690.3	37.8	215.2	(NA)	(NA)
1963 Census....	125	67	17.4	117.5	12.3	25.4	74.1	250.6	405.0	641.0	22.2	205.9	84	81
1962 ASM <sup>1</sup> .....	(NA)	(NA)	18.6	124.6	12.9	26.9	82.1	216.6	480.4	687.7	24.6	198.3	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	18.4	120.0	12.7	26.0	74.7	222.9	452.3	661.0	22.6	186.4	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	17.5	110.7	12.2	24.4	67.7	185.2	423.1	608.2	14.1	163.2	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	17.8	108.8	12.6	25.7	68.2	216.9	395.0	596.2	*13.5	163.2	(NA)	(NA)
1958 Census <sup>2</sup> ....	143	73	16.6	94.7	11.5	22.5	57.4	174.6	306.6	486.3	15.0	149.0	77	82

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary****Rocco C. Siciliano, Under Secretary****BUREAU OF THE CENSUS George Hay Brown, Director**



n.e.c., \$107.0 million were products primary to other industries; and \$20.0 million were receipts for miscellaneous activities. The industry shipments of primary products represented 89 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 84 percent in 1963.

The total value of rolled, drawn, and extruded nonferrous metals, n.e.c., shipped by all producers in 1967 was \$991.4 million of which \$842.2 million, or 85 percent, were shipped by plants

classified in industry 3356, Nonferrous Rolling and Drawing, N.E.C., while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 81 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3356, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

M33G, Magnesium Mill Products,

BDSAF-263, Titanium Ingot and Mill Products.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967										1963		
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total	With 20 employees or more (number)	Number	Payroll (million dollars)	Number	Man-hours	Wages (million dollars)						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
	INDUSTRY 3356.--NONFERROUS ROLLING AND DRAWING, N.E.C.												
United States, total.....	139	72	20.9	159.6	14.6	30.2	97.7	346.5	626.6	969.2	57.1	17.4	250.6
New England.....	16	10	2.4	15.4	1.9	4.0	11.1	51.9	131.7	172.5	4.1	1.8	22.9
Middle Atlantic.....	43	23	4.8	36.4	3.2	6.6	21.1	60.7	184.7	265.0	8.6	4.0	61.3
New Jersey.....	16	9	1.9	14.5	1.2	2.4	8.5	8.3	75.7	102.5	(D)	1.6	19.6
North Central.....	38	21	7.9	61.7	5.4	11.2	37.3	119.7	153.9	270.4	26.2	(D)	(D)
Ohio.....	9	6	3.5	27.4	2.2	4.5	15.9	58.1	79.4	133.8	8.7	2.6	33.9
Michigan.....	11	5	0.7	6.2	0.5	1.0	3.8	12.6	20.1	33.0	(D)	0.8	13.5
South:													
Texas.....	6	2	0.1	0.5	0.1	0.1	0.4	0.8	3.1	3.9	(D)	(D)	(D)
Pacific.....	14	5	0.5	3.6	0.4	0.8	2.6	9.8	20.6	29.8	0.9	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers <sup>1</sup>		Commercial shipments		Interplant transfers	
		Quantity	Value	Quantity	Value	Quantity	Value
		(1,000 short tons)	(Million dollars)	(1,000 short tons)	(Million dollars)	(1,000 short tons)	(Million dollars)
		1967					
3356- --	ROLLED AND DRAWN NONFERROUS METALS, N.E.C., TOTAL.....	(X)	991.4	(X)	(NA)	(X)	(NA)
33560 43	Magnesium and magnesium-base alloys: <sup>2</sup>						
33560 44	Extruded shapes (including rod and bar).....	26.5	55.1	(D)	(D)	(D)	(D)
	Other (sheet, plate, etc.) (excluding powder).....						
33560 51	Lead and lead-base alloys:						
33560 55	Plate, sheet, and strip.....	49.2	27.8	(D)	(D)	(D)	(D)
33560 59	Pipe and tubing, traps, and bends.....	19.5	10.0	(D)	(D)	(D)	(D)
	Other rolled, drawn, or extruded lead products.....	21.5	13.7	(D)	(D)	(D)	(D)
33560 61	Nickel and nickel-base alloys (including monel):						
33560 63	Plate, sheet, and strip (excluding monel).....	12.8	48.8	(D)	(D)	(D)	(D)
33560 65	Pipe and tubing (excluding monel).....	7.3	36.9	(D)	(D)	(D)	(D)
33560 69	Monel, all shapes and forms.....	42.1	122.5	(D)	(D)	(D)	(D)
	Other, excluding monel (including rods and bars).....						
33560 71	Zinc and zinc-base alloys (including plate, sheet, strip, rods, bars, pipe, and tubing).....	17.4	9.2	(D)	(D)	(D)	(D)
33560 74	Titanium: <sup>3</sup>						
33560 72	Forging and extrusion billet.....	7.7	43.1	(D)	(D)	(D)	(D)
33560 79	Ingot.....	(NA)	127.6	(D)	(D)	(D)	(D)
	Other titanium mill products (sheet, plate, tubing, bar, etc.)..						
33560 82	Precious metal mill shapes:						
33560 84	Gold.....	(NA)	290.8	-	-	-	-
33560 86	Silver.....						
33560 89	Platinum.....						
	Other.....						
33560 92	Other nonferrous metal wire.....	(NA)	74.2	(D)	(D)	(D)	(D)
33573 11							
33560 92	Made in rolling and drawing, n.e.c. (industry 3356).....	(NA)	35.3	(D)	(D)	(D)	(D)
33573 11	Made in nonferrous wire drawing (industry 3357) and other industries.....	(NA)	<sup>4</sup> 38.9	(D)	(D)	(D)	(D)
33560 98	Other nonferrous metals.....	(NA)	89.4	(D)	(D)	(D)	(D)
33560 00	Rolling and drawing, n.e.c., n.s.k. (For establishments with 10 or more employees in 1967. See Note.).....	(X)	39.9	(X)	(NA)	(X)	(NA)
33560 02	Rolling and drawing, n.e.c., n.s.k. (For establishments with less than 10 employees in 1967. See Note.).....	(X)	2.4	(X)	(NA)	(X)	(NA)
		1963					
3356- --	ROLLED AND DRAWN NONFERROUS METALS, N.E.C., TOTAL.....	(X)	630.5	(X)	(NA)	(X)	(NA)
33560 43	Magnesium and magnesium-base alloy mill shapes: <sup>2</sup>						
33560 44	Extruded shapes, including rod and bar.....	12.8	20.7	(D)	(D)	(D)	(D)
	Other (sheet, plate, etc.), excluding powder.....						
33560 51	Lead and lead-base alloy mill shapes:						
33560 55	Plate, sheet, and strip.....	24.3	7.6	(D)	(D)	(D)	(D)
33560 59	Pipe and tubing, traps and bends.....	17.5	7.0	(D)	(D)	(D)	(D)
	Other rolled, drawn, or extruded lead products.....	22.3	12.8	(D)	(D)	(D)	(D)
33560 61	Nickel and nickel-base alloy mill shapes including monel:						
33560 63	Plate, sheet, and strip, excluding monel.....	10.7	35.6	(D)	(D)	(D)	(D)
33560 65	Pipe and tubing, excluding monel.....	5.3	23.6	(D)	(D)	(D)	(D)
33560 69	Monel, all shapes and forms.....	37.1	103.4	(D)	(D)	(D)	(D)
	Rod, bar, and other, excluding monel.....						
33560 71	Zinc and zinc-base alloy mill shapes, including plate, sheet, strip, rods, bars, pipe, and tubing.....	35.0	16.0	(D)	(D)	(D)	(D)
33560 74	Titanium: <sup>3</sup>						
33560 72	Forging and extrusion billet.....	2.3	14.5	(D)	(D)	(D)	(D)
33560 79	Ingot.....	(NA)	66.9	(D)	(D)	(D)	(D)
	Other titanium mill products (sheet, plate, tubing, bar, etc.)..						
33560 83	Precious metal mill shapes.....	(NA)	193.4	(D)	(D)	(D)	(D)

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963--Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers <sup>1</sup>		Commercial shipments		Interplant transfers	
		Quantity (1,000 short tons)	Value (million dollars)	Quantity (1,000 short tons)	Value (million dollars)	Quantity (1,000 short tons)	Value (million dollars)
3356--	ROLLED AND DRAWN NONFERROUS METALS, N.E.C.--Continued	1963--Continued					
33560 81 33573 11	Other nonferrous metal wire.....	(NA)	45.6	(D)	(D)	(D)	(D)
33560 81 33573 11	Made in rolling and drawing, n.e.c. (industry 3356).....	(NA)	12.4	(D)	(D)	(D)	(D)
33560 81 33573 11	Made in nonferrous wire drawing (industry 3357) and other industries.....	(NA)	<sup>5</sup> 33.2	(D)	(D)	(D)	(D)
33560 98 33560 00	Other nonferrous metals.....	(NA)	67.2	(D)	(D)	(D)	(D)
	Rolling and drawing, n.e.c., n.s.k.....	(X)	16.2	(X)	(NA)	(X)	(NA)

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or from related figures. (NA) Not available. n.e.c. Not elsewhere classified. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Includes shipments of these products produced on a toll basis by others.

<sup>2</sup>Data are also published in Current Industrial Reports Series M33G "Magnesium Mill Products".

<sup>3</sup>Data are also published in Current Industrial Reports Series BDSAF-263 "Titanium Ingot and Mill Products."

<sup>4</sup>Includes \$30.7 million produced in Industry 3357 "Nonferrous Wire Drawing, etc."

<sup>5</sup>Includes \$25.8 million produced in Industry 3357 "Nonferrous Wire Drawing, etc."

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	1967		1963	
		Quantity (1,000 short tons)	Delivered cost (million dollars)	Quantity (1,000 short tons)	Delivered cost (million dollars)
	INDUSTRY 3356.--NONFERROUS ROLLING AND DRAWING, N.E.C.				
	Materials, containers, and supplies, total.....	(X)	581.5	(X)	368.4
	Nonferrous metals and alloys (ingot, pig, shot, etc.):				
333404	Aluminum, unalloyed.....	13.5	7.2	2.4	1.0
333405	Aluminum-base alloys.....			( <sup>1</sup> )	( <sup>1</sup> )
333121	Copper, unalloyed (cathodes, ingot, cakes, slabs, etc.).....			( <sup>1</sup> )	( <sup>1</sup> )
333113	Copper-base alloy raw materials (ingot, billets, shot, waffle, hardeners, etc.)...	8.9	7.1	5.9	3.7
333232	Lead and lead-base alloys.....	63.2	21.7	44.4	14.4
333973	Magnesium and magnesium-base alloys.....	( <sup>1</sup> )	( <sup>1</sup> )	15.1	7.9
333971	Nickel and nickel-base alloys.....	43.5	81.3	( <sup>1</sup> )	( <sup>1</sup> )
333348	Zinc and zinc-base alloys.....	32.5	8.5	51.1	11.6
333909	Other nonferrous metals and alloys.....	(NA)	182.7	(NA)	96.6
	Nonferrous metal scrap (excluding home scrap):				
	Aluminum and aluminum-base alloy:				
999809	From other establishments of your company.....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
999810	From all other sources (excluding home scrap).....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
999812	Copper and copper-base alloy.....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
999814	Zinc and zinc-base alloy, including drosses and skimming.....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
335100	Brass mill shapes (rod, bar, sheet, etc.).....	1.3	1.4	0.3	0.3
970099	All other materials and components, parts, containers, and supplies consumed.....	(X)	217.2	(X)	200.4
976000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> .....	(X)	54.4	(X)	32.4

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Included with material code 970099 "All other materials etc." to avoid disclosing operations of individual companies.

<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3356, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

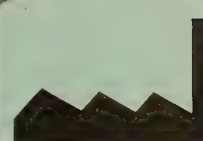
**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# 1967 CENSUS OF MANUFACTURES



MC67(P)-33D-4

## INDUSTRY SERIES

**preliminary  
report**

### Nonferrous wiredrawing and insulating

SIC Code 3357

The Drawing and Insulating of Nonferrous Wire Industry includes establishments primarily engaged in drawing, drawing and insulating, and insulating wire and cable of nonferrous metals from purchased wire bars, rods, or wire.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Nonferrous Wiredrawing and Insulating Industry amounted to \$3,564.1 million, an increase of 68 percent compared with 1963. Value added by manufacture at \$1,313.9 million in 1967 was 94 percent more than value added in

1963. Average employment in the industry showed an increase of 24 percent from 1963 to a total of 69.8 thousand employees in 1967.

Of the \$3,564.1 million total value of shipments and other receipts of establishments classified as nonferrous wiredrawing and insulating, \$252.1 million were products primary to other industries; and \$108.1 million were receipts for miscellaneous activities. The industry shipments of primary products represented 93 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 91 percent in 1963.

The total value of nonferrous wiredrawing and insulating shipped by all producers in 1967

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
INDUSTRY 3357. --NONFERROUS WIREDRAWING AND INSULATING														
1967 Census....	339	270	69.8	492.6	53.7	114.2	346.0	1,313.9	2,285.7	3,564.1	194.6	569.4	93	88
1966 ASM <sup>1</sup> .....	(NA)	(NA)	68.8	487.8	54.1	117.1	348.7	1,341.2	2,394.3	3,711.1	190.0	466.7	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	61.5	412.8	48.4	102.8	296.9	989.5	1,961.8	2,919.5	90.2	398.1	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	54.6	347.9	42.7	90.3	248.1	763.6	1,541.9	2,320.9	47.1	328.1	(NA)	(NA)
1963 Census....	299	227	56.4	339.9	43.9	90.4	240.9	677.5	1,452.1	2,117.9	44.5	339.3	91	86
1962 ASM <sup>1</sup> .....	(NA)	(NA)	54.7	329.7	42.4	87.8	230.7	649.3	1,253.9	1,895.9	45.5	331.1	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	52.9	302.0	40.5	83.1	210.3	482.9	1,122.0	1,862.1	43.5	307.6	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	55.3	311.3	42.1	87.8	217.8	619.7	1,126.8	1,744.8	42.9	302.0	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	55.0	302.7	44.5	89.7	216.0	629.9	1,125.9	1,750.5	42.1	306.1	(NA)	(NA)
1958 Census <sup>2</sup> ...	278	182	51.9	271.9	39.8	81.7	191.0	530.1	941.3	1,466.0	35.4	282.3	95	83

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued January 1970

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**



was \$3,624.2 million of which \$3,203.9 million, or 88 percent, were shipped by plants classified in industry 3357, Nonferrous Wiredrawing and Insulating, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 86 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3357, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-33L, Insulated Wire and Cable.

M33-2, Aluminum Ingot and Mill Products.

BDSAF-84, Copper-Base Mill and Foundry Products.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3357.--NONFERROUS WIREDRAWING AND INSULATING												
United States, total.....	339	270	69.8	492.6	53.7	114.2	346.0	1,313.9	2,285.7	3,564.1	194.6	56.4	677.5
New England.....	79	63	18.0	116.0	14.2	29.2	82.1	317.8	362.9	670.8	29.3	16.3	158.9
Massachusetts.....	31	26	5.5	34.6	4.4	9.3	24.9	94.3	82.8	172.1	7.4	6.2	52.2
Rhode Island.....	16	14	6.0	37.0	4.8	9.7	27.1	103.6	145.4	243.4	8.9	5.4	49.2
Middle Atlantic.....	94	73	21.5	157.3	16.0	34.1	106.1	400.3	685.5	1,077.0	34.6	18.9	201.1
New York.....	42	30	10.1	73.7	7.8	16.5	50.8	177.4	333.2	511.5	14.7	9.5	101.6
New Jersey.....	34	26	8.6	65.8	5.9	12.6	41.9	180.4	290.3	463.3	15.7	7.0	81.2
Pennsylvania.....	18	17	2.8	17.8	2.3	5.0	13.4	42.5	62.0	102.2	4.2	2.4	18.4
North Central.....	83	66	17.9	131.9	14.0	29.9	96.7	367.7	776.9	1,138.2	30.2	14.2	221.1
Ohio.....	10	6	0.8	6.2	0.6	1.3	4.4	12.4	14.2	27.5	(D)	(D)	(D)
Indiana.....	19	16	5.7	43.7	4.6	10.0	33.7	144.7	299.5	436.3	12.3	(D)	(D)
Michigan.....	11	10	2.5	15.3	2.0	4.3	12.1	33.9	87.7	121.4	1.5	(D)	(D)
South Atlantic.....	21	18	6.3	45.7	4.8	10.6	32.5	111.3	224.4	334.0	19.6	(D)	(D)
North Carolina.....	9	8	1.2	6.1	1.0	2.2	4.5	21.3	29.0	50.2	8.3	(D)	(D)
East South Central....	13	12	1.1	6.3	0.8	1.8	4.2	18.1	58.1	73.8	28.9	(D)	(D)
West South Central....	6	6	1.1	7.4	0.9	2.3	5.7	29.1	33.5	60.3	(D)	(D)	(D)
West.....	43	32	3.9	27.9	3.0	6.2	18.8	69.6	144.4	210.1	(D)	6.9	96.4
California.....	35	28	3.3	24.0	2.5	5.3	15.9	69.0	102.7	168.7	(D)	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Production <sup>2</sup>  (1,000 short tons)	Total shipments including interplant transfers <sup>1</sup>		Commercial shipments		Interplant transfers		Produced and consumed in the same plant in the manufacture of other products <sup>2</sup> (1,000 short tons)	Shipments of products manufactured from materials owned by others <sup>2</sup> (1,000 short tons)
			Quantity	Value	Quantity	Value	Quantity	Value		
			(1,000 short tons)	(million dollars)	(1,000 short tons)	(million dollars)	(1,000 short tons)	(million dollars)		
			1967							
3357- --	NONFERROUS WIREDRAWING AND INSULATING, TOTAL.....	(NA)	(X)	3,624.2	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
33571 -- 33521 --	Aluminum and aluminum-base alloy wire and cable (including ACSR) <sup>3</sup> .....	(NA)	344.2	250.4	315.5	233.7	18.7	16.7	(NA)	(NA)
33571 -- 33521 --	Made in industry 3357 (nonferrous wire drawing, etc.) and other industries..... Made in industry 3352 (aluminum rolling and drawing).....	(NA) (NA)	243.4 90.8	175.4 75.0	230.3 85.0	164.7 69.0	13.1 5.8	10.7 6.0	(NA) (NA)	(NA) (NA)
33571 11 33521 11	Bare wire for electrical transmission.....	(NA)	54.7	57.8	46.1	50.2	8.6	7.6	(NA)	(NA)
33571 11 33521 11	Made in industry 3357 (nonferrous wire drawing, etc.) and other industries..... Made in industry 3352 (aluminum rolling and drawing).....	(NA)	54.7	57.8	46.1	50.2	8.6	7.6	(NA)	(NA)
33571 51 33521 51	Bare wire for other than electrical transmission.....	(NA)	26.7	36.4	206.3	143.6	6.7	6.7	(NA)	(NA)
33571 51 33521 51	Made in industry 3357 (nonferrous wire drawing, etc.) and other industries..... Made in industry 3357 (aluminum rolling and drawing).....	(NA) (NA)	9.6 17.1	10.4 26.0						
33571 61 33521 62	Aluminum cable-steel reinforced (ACSR) (gross weight) <sup>4</sup> .....	(NA)	186.3	113.9						
33571 61 33521 62	Made in industry 3357 (nonferrous wire drawing, etc.) and other industries..... Made in industry 3352 (aluminum rolling and drawing).....	(NA) (NA)	154.1 32.2	92.6 21.3						
33571 65 33521 69	Other aluminum cable, bare <sup>4</sup> .....	(NA)	66.5	42.3	62.9	39.9	3.6	2.4	(NA)	(NA)
33571 65 33521 69	Made in industry 3357 (nonferrous wire drawing, etc.) and other industries..... Made in industry 3352 (aluminum rolling and drawing).....	(NA)	66.5	42.3	62.9	39.9	3.6	2.4	(NA)	(NA)
33572 -- 33572 11 33572 51 33572 71	Copper and copper-base alloy wire (including strand and cable) bare, and tinned for electrical transmission <sup>5</sup> ..... Wire, unalloyed for electrical transmission.. Wire, alloyed for electrical transmission..... Strand and cable.....	(NA) (NA) (NA) (NA)	335.0 261.8 73.2	368.5 262.7 105.8	(D) (D) (D) (D)	(D) (D) (D) (D)	(D) (D) (D) (D)	(D) (D) (D) (D)	(NA) (NA) (NA) (NA)	(NA) (NA) (NA) (NA)
			1963							
3357- --	NONFERROUS WIRE DRAWING AND INSULATING TOTAL.....	(NA)	(NA)	2,185.0	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
33571 -- 33521 --	Aluminum and aluminum-base alloy wire and cable (including ACSR).....	(NA)	191.8	127.9	180.8	118.8	11.0	9.1	(D)	(D)
33571 -- 33521 --	Made in nonferrous wire drawing (SIC 3357) and other industries..... Made in aluminum rolling mills (SIC 3352)....	(NA) (NA)	110.7 81.1	71.0 56.9	105.6 75.2	67.4 51.4	5.1 5.9	3.6 5.5	(NA) (NA)	- (D)
33571 11 33521 11	Bare wire, conductor.....	(NA)	19.5	11.6	15.1	8.1	4.4	3.5	(NA)	-
33571 11 33521 11	Made in nonferrous wire drawing and other industries..... Made in aluminum rolling mills.....	(NA) (NA)	13.2 6.2	7.4 4.2	15.1	8.1	4.4	3.5	(NA) (NA)	- -
33571 51 33521 51 33571 51	Bare wire, other than conductor..... Made in nonferrous wire drawing and other industries..... Made in aluminum rolling mills.....	(NA) (NA) (NA)	23.2 5.6 17.7	23.8 5.6 18.1	19.4	19.8	3.8	4.0	(NA) (NA) (NA)	(D) - (D)

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Production <sup>2</sup>  (1,000 short tons)	Total shipments including interplant transfers <sup>1</sup>		Commercial shipments		Interplant transfers		Produced and consumed in the same plant in the manufacture of other products <sup>2</sup> (1,000 short tons)	Shipments of products manufactured from materials owned by others <sup>2</sup> (1,000 short tons)		
			Quantity	Value	Quantity	Value	Quantity	Value				
			(1,000 short tons)	(1,000 short tons)	(million dollars)	(1,000 short tons)	(million dollars)	(1,000 short tons)			(million dollars)	
			1963									
	NONFERROUS WIREDRAWING AND INSULATING--Con.											
33571 -- 33521 --	Aluminum and aluminum-base alloy wire and cable (including ACSR)--Continued											
33571 61 33521 62 33571 65 33521 69	Aluminum cable-steel reinforced (ACSR) <sup>4</sup> ..... Other aluminum cable, bare <sup>4</sup> .....	(NA) (NA)	130.4 18.7	81.3 11.3	146.3	90.9	2.8	1.7	(NA) (NA)	- -		
33572 --	Copper and copper-base alloy wire (including strand and cable), bare, and tinned, for electrical transmission <sup>5</sup> .....	(X)	(X)	245.0					(X)	(X)	(X)	(X)
33572 11 33572 51 33572 71 33572 00	Wire, unalloyed for electrical transmission.. Wire, alloyed, for electrical transmission... Strand and cable..... Other copper and copper-base alloy wire, n.s.k.....	378.9 (NA) 264.2 (X)	230.1 (NA) 62.1 (X)	181.3 7.2 55.9 0.5	145.8 (D) 45.0 (X)	114.9 (D) 41.6 (X)	84.2 (D) 17.1 (X)	66.4 (D) 14.3 (X)	365.5   (X)	7.5   (X)		

Product code	Product	Unit of measure	Total shipments including interplant transfers				
			1967		1963		
			Quantity	Value (\$1,000)	Quantity	Value (\$1,000)	
33573 11 33560 92	Other bare nonferrous metal wire, except insulated.....		(X)	675.8	(NA)	45.6	
33573 11 33560 92	Made in nonferrous wire drawing (industry 3357) and other industries..... Made in rolling and drawing, n.e.c. (industry 3356).....		(X) (X)	640.5 35.3	(NA) (NA)	33.2 12.4	
33575 -- 34815 --	Nonferrous wire cloth and other woven nonferrous wire products...		(X)	90.1	(X)	70.5	
33575 -- 34815 --	Made in industry 3357 (nonferrous wire drawing, etc.)..... Made in fabricated wire products, n.e.c. (industry 3481) and other industries.....		(X) (X)	36.2 53.9	(X) (X)	21.2 49.3	
33575 25 34815 15	Insect wire screening: Aluminum.....	Million sq. ft.		472.1	21.4	459.1	21.2
33575 25 34815 15	Made in industry 3357..... Made in industry 3481 and other industries.....	do..... do.....		351.1 121.0	14.1 7.3	188.1 271.0	7.3 14.0
33575 29 34815 19	All other nonferrous metal.....	do.....		56.1	1.6	(NA)	0.8
33575 53 34815 53 33575 59 34815 59	Paper machine wire cloth (fourdrinier and cylinder): Copper..... All other nonferrous metal.....	do..... do..... do.....		26.8 5.3	43.4 5.9	24.6	36.6
33575 65 34816 65 33575 00 34815 00	Industrial wire cloth, nonferrous..... Nonferrous wire cloth and other woven nonferrous wire products, n.s.k.....	do..... do.....		17.5 (X)	14.4 3.4		
33574 --	Communication wire and cable: As reported in the census of manufactures..... As reported on annual Form MA-33L.....			(X) (X)	910.7 862.5	(X) (X)	581.8 (X)

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (\$1,000)	Quantity	Value (\$1,000)
	NONFERROUS WIREDRAWING AND INSULATING--Continued					
	Appliance wire and cord and flexible cord sets, produced in establishments which insulate wire and cable:					
33576 --	As reported on annual Form MA-33L.....		(X)	259.8	(X)	(X)
36996 --	As reported in the census of manufactures.....		(X)	268.3	(X)	167.7
33576 --	Made in nonferrous wiredrawing, etc. (industry 3357).....		(X)	174.2	(X)	101.7
36996 --	Made in electrical products, n.e.c. (industry 3699) and other industries.....		(X)	94.1	(X)	66.0
	Magnet wire:					
33577 --	As reported in the census of manufactures.....		(X)	449.6	(X)	258.3
	As reported on annual Form MA-33L.....		(X)	420.4	(X)	(X)
	Power wire and cable:					
33578 --	As reported in the census of manufactures.....		(X)	433.0	(X)	218.8
	As reported on annual Form MA-33L.....		(X)	407.4	(X)	(X)
	Other insulated wire and cable, n.e.c.:					
33579 --	As reported in the census of manufactures.....		(X)	736.3	(X)	454.1
	As reported on annual Form MA-33L.....		(X)	736.2	(X)	(X)
33570 00	Drawn and insulated nonferrous wire, n.s.k. (For establishments with 10 or more employees. See Note.).....		(X)	39.4	(X)	15.4
33570 02	Drawn and insulated nonferrous wire, n.s.k. (For establishments with fewer than 10 employees. See Note.).....		(X)	2.1		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.e.c. Not elsewhere classified. n.s.k. Not specified by kind. (X) Not applicable. - Represents zero.

<sup>1</sup>Includes shipments of those products produced on a toll basis by others.

<sup>2</sup>1967 data on production, produced and consumed in the same establishment and toll shipments will be published in the final report for this industry.

<sup>3</sup>Data are also shown in Current Industrial Reports Series M33-2, Aluminum Ingot and Mill Products.

<sup>4</sup>Data for ACSR and aluminum cable, bare, are also published in Current Industrial Reports Series M33-2, "Aluminum Ingot and Mill Products." Net quantity of shipments as reported in this series for the years 1967 and 1963 totaled 253.1 and 136.2 thousand short tons of aluminum content, respectively.

<sup>5</sup>Data are also shown in Current Industrial Reports Series BDSAF-84, Shipments of Copper-Base Mill and Foundry Products.

<sup>6</sup>Includes revisions to data previously published in report for SIC code 3356, Nonferrous rolling & drawing, n.e.c.

<sup>7</sup>Includes revisions to data previously published in SIC 3699, Electrical equipment, n.e.c.



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	Total		Establishments with wiredrawing departments						Establishments without wiredrawing departments (335714)	
			Quantity	Delivered cost	With rod mill (335711)		Without rod mill					
							Without insulating department (335712)		With insulating department (335713)			
				(million dollars)	Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
1967												
	INDUSTRY 3357.--NONFERROUS WIREDRAWING, ETC.											
	Materials, containers, and supplies, total.....		(X)	2,212.5								
	Wire bar:											
333473	Aluminum and aluminum-base alloy.....	Million lbs..	(D)	(D)								
333125	Copper and copper-base alloy...	...do.....	943.2	389.8								
	Nonferrous metal mill shapes and forms (except castings):											
	Rods:											
335251	Aluminum and aluminum-base alloy.....	...do.....	397.3	103.0								
335124	Copper, unalloyed.....	...do.....	1,007.7	450.2								
335125	Copper-base alloy.....	...do.....	140.7	61.3	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
	Wire for redrawing:											
335211	Aluminum and aluminum-base alloy.....	...do.....	26.2	10.3								
335112	Copper and copper-base alloy...	...do.....	100.8	47.4								
335608	Other nonferrous metals.....	...do.....	18.9	18.6								
	Bare wire (except wire for redrawing):											
335725	Copper and copper-base alloy (electrical).....	...do.....	432.8	211.3								
335718	Aluminum and aluminum-base alloy.....	...do.....	23.9	9.1								
	All other mill shapes and forms:											
335109	Copper and copper-base alloy, including mechanical wire...	...do.....	28.4	20.3								
335207	Aluminum and aluminum-base alloy.....	...do.....	95.4	36.6								
335609	All other nonferrous metal mill shapes.....	...do.....	(NA)	8.8	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
335790	Insulated wire and cable for further processing.....	Million lbs. (copper content)....	73.8	51.2								
333121	Refined unalloyed copper (cathodes, ingot, cakes, slabs, etc., but excluding wire bar)...	1,000 s. tons	(D)	(D)								
333113	Copper-base alloy raw materials (ingot, billets, shot, waffle, hardeners, etc.).....	...do.....	(D)	(D)								
999812	Copper and copper-base alloy scrap.....	...do.....	(D)	(D)								
086111	Natural rubber.....	1,000 long tons.....	(D)	(D)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
282202	Synthetic rubber.....	...do.....	49.3	28.7								
282101	Polyethylene plastics, all forms.	Million lbs..	263.0	59.5								
282102	Vinyl plastics, all forms.....	...do.....	356.8	65.7								
228102	Cotton yarns.....	...do.....	8.2	6.5								
970099	All other materials and components, parts, containers and supplies consumed.....		(X)	519.9								
976000	Materials, containers, parts, and supplies, n.s.k. <sup>2</sup> .....		(X)	113.2								

See footnotes at end of table.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963—Continued

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	Total		Establishments with wiredrawing departments						Establishments without wiredrawing departments (335714)	
			Quantity	Delivered cost (million dollars)	With rod mill (335711)		Without rod mill					
							Without insulating department (335712)		With insulating department (335713)			
					Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
1963												
	INDUSTRY 3357.--NONFERROUS WIREDRAWING, ETC.											
	Materials, containers, and supplies, total.....		(X)	1,405.4	(X)	362.2	(X)	94.2	(X)	706.3	(X)	242.7
	Nonferrous metal mill shapes and forms (except castings):											
	Rods:											
335251	Aluminum and aluminum-base alloy.....	Million lbs..	222.4	60.0	(D)	(D)	79.1	18.1	137.2	36.2	(D)	(D)
335124	Copper, unalloyed.....	..do.....	920.1	301.4	(D)	(D)	133.9	44.1	692.1	226.7	(D)	(D)
335125	Copper-base alloy.....	..do.....	185.5	62.0	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
	Wire for redrawing:											
335211	Aluminum and aluminum-base alloy.....	..do.....	3.3	1.1	(D)	(D)	(D)	(D)	(D)	(D)	-	-
335112	Copper and copper-base alloy.....	..do.....	60.4	22.3	(D)	(D)	(D)	(D)	18.2	6.5	-	-
335608	Other nonferrous metals.....	..do.....	10.3	7.8	(D)	(D)	(D)	(D)	(D)	(D)	-	-
	Bare wire (except wire for redrawing):											
335725	Copper and copper-base alloy (electrical).....	..do.....	331.1	130.1	(D)	(D)	(D)	(D)	56.5	22.0	264.1	103.2
335718	Aluminum and aluminum-base alloy.....	..do.....	13.5	4.8	(D)	(D)	(D)	(D)	7.3	2.5	(D)	(D)
	All other mill shapes and forms:											
335109	Copper and copper-base alloy, including mechanical wire...	..do.....	40.9	22.6	(D)	(D)	(D)	(D)	24.7	14.0	14.0	7.2
335207	Aluminum and aluminum-base alloy.....	..do.....	13.8	4.6	(D)	(D)	-	-	(D)	(D)	(D)	(D)
335609	All other nonferrous metal mill shapes.....	..do.....	(NA)	6.8	(NA)	3.1	(NA)	0.8	(NA)	2.5	(NA)	0.4
335790	Insulated wire and cable for further processing.....	Million lbs. (copper content)....	24.0	18.6	(D)	(D)	-	-	(D)	(D)	19.6	14.2
333121	Refined unalloyed copper (wire bar, cathodes, ingot, cakes, slabs, etc.).....	1,000 s. tons										
333113	Copper-base alloy raw materials (ingot, billets, shot, waffle, hardeners, etc.).....	..do.....	428.2	249.4	(D)	(D)	(D)	(D)	(D)	(D)	-	-
999812	Copper and copper-base alloy scrap.....	..do.....	(D)	(D)	(D)	(D)	-	-	-	-	-	-
086111	Natural rubber.....	1,000 long tons.....	4.6	2.9	(D)	(D)	-	-	4.4	2.9	(D)	(D)
282202	Synthetic rubber.....	..do.....	46.9	26.1	4.6	2.5	-	-	37.8	21.0	4.5	2.7
282101	Polyethylene plastics, all forms.....	Million lbs..	198.8	57.9	14.6	4.2	-	-	150.2	42.7	34.0	11.0
282102	Vinyl plastics, all forms.....	..do.....	251.2	44.9	(D)	(D)	(D)	(D)	180.8	30.4	43.3	9.0
228102	Cotton yarns.....	..do.....	12.6	9.7	(D)	(D)	(D)	(D)	10.3	7.6	1.6	1.3
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	330.5	(X)	349.8	(X)	29.9	(X)	274.9	(X)	72.3
976000	Materials, containers, parts, and supplies, n.s.k. <sup>2</sup> .....		(X)	42.0	(X)	2.6	(X)	1.3	(X)	16.8	(X)	21.3

- Represents zero. (D) Included with material code 970099, "All other materials and components, parts, containers, and supplies consumed," to avoid disclosing figures for individual companies. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Data on materials consumed by subindustry for 1967 will be published in the final report for this industry.

<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3357, these small establishments accounted for approximately 0.1 percent of payrolls and 0.1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

**Textile mill products • Apparel and leather • Chemicals, rubber, and plastics • Machinery and equipment • Primary metals • Intermediate metal products • Processed foods • Lumber, furniture, and paper products • Stone, clay, and glass products.**

A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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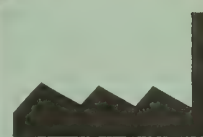
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# 1967 CENSUS OF MANUFACTURES



MC67(P)-33D-5

## INDUSTRY SERIES

**preliminary  
report**

### Aluminum castings

SIC Code 3361

The Aluminum Castings Industry includes establishments primarily engaged in manufacturing castings and diecastings of aluminum.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Aluminum Castings Industry amounted to \$965.7 million, an increase of 51 percent compared with 1963. Value added by manufacture at \$546.3 million in 1967 was 59 percent more than value added in 1963. Average employment in the industry showed an increase of 29

percent from 1963 to a total of 46.7 thousand employees in 1967.

Of the \$965.7 million total value of shipments and other receipts of establishments classified as aluminum castings, \$169.8 million were products primary to other industries; and \$17.3 million were receipts for miscellaneous activities. The industry shipments of primary products represented 82 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 81 percent in 1963.

The total value of aluminum castings shipped by all producers in 1967 was \$891.7 million of which \$778.6 million, or 87 percent, were shipped by plants classified in industry 3361, Aluminum Castings, while the remainder was shipped by

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3361.--ALUMINUM CASTINGS														
1967 Census....	997	416	46.7	323.1	40.1	81.6	252.1	546.3	421.3	965.7	39.5	72.2	82	87
1966 ASM <sup>1</sup> .....	(NA)	(NA)	44.8	300.8	38.1	78.6	231.5	499.4	421.2	916.8	38.9	64.3	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	39.9	265.3	33.8	69.8	206.2	436.2	382.8	813.9	46.6	67.7	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	36.8	240.6	31.0	65.2	188.1	381.7	332.2	708.7	25.9	56.7	(NA)	(NA)
1963 Census....	954	321	36.2	222.8	30.7	63.4	174.2	343.9	299.4	640.2	18.4	46.9	81	83
1962 ASM <sup>1</sup> .....	(NA)	(NA)	38.4	228.9	32.7	66.2	178.9	363.4	295.0	656.4	17.7	43.0	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	34.5	194.8	28.6	58.6	147.9	283.4	271.3	556.0	14.9	42.6	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	35.7	198.5	29.7	61.9	151.2	286.7	273.3	564.3	24.9	41.4	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	36.4	197.0	30.5	61.6	151.3	291.8	264.3	552.8	23.4	52.8	(NA)	(NA)
1958 Census <sup>2</sup> ...	955	283	30.0	158.9	24.6	48.7	119.2	225.7	198.6	422.0	12.2	43.6	79	81

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 4 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director

plants classified in other industries. This percent, called the coverage ratio, was 83 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1,

2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

#### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3361, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

M33E, Nonferrous Castings.

The data that are shown in this monthly Current Industrial Report, however, are not comparable to the data in this report in that no data are included in this report for castings produced by captive foundry departments of plants classified in other industries. In addition, certain products are reported as castings in the monthly survey which in the census of manufactures are classified as finished products in other industries.



TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3361.--ALUMINUM CASTINGS													
United States, total.....	997	416	46.7	323.1	40.1	81.6	252.1	546.3	421.3	965.7	39.5	36.2	343.9
New England.....	73	20	2.2	14.8	1.9	4.0	11.2	24.6	14.8	39.3	1.4	2.1	19.1
Connecticut.....	24	7	1.2	8.3	1.0	2.1	6.4	13.0	9.2	22.1	0.9	1.2	10.8
Middle Atlantic.....	151	63	8.9	64.6	7.6	15.2	50.5	105.4	74.2	179.8	7.8	7.0	68.8
New York.....	55	26	3.9	29.1	3.3	6.6	22.5	45.1	34.6	80.1	4.2	3.3	33.4
New Jersey.....	32	11	1.5	11.8	1.3	2.7	9.2	18.8	13.9	32.6	0.9	1.3	12.4
Pennsylvania.....	64	26	3.5	23.7	3.0	5.9	18.8	41.6	25.8	67.1	2.7	2.3	23.1
East North Central....	376	178	22.7	162.1	19.5	40.0	127.0	276.9	231.1	507.3	18.1	17.6	166.6
Ohio.....	126	57	10.1	71.8	8.5	17.3	55.6	123.9	91.0	215.0	6.3	7.3	77.5
Indiana.....	36	19	2.9	23.7	2.4	5.0	18.7	42.9	47.3	90.1	3.0	2.3	22.6
Illinois.....	103	47	4.3	28.0	3.7	7.6	22.0	50.0	39.0	88.4	4.2	3.4	28.2
Michigan.....	76	31	2.8	19.9	2.5	5.1	15.9	33.6	28.5	62.1	2.7	2.2	18.9
Wisconsin.....	35	24	2.7	18.6	2.4	4.9	14.7	26.5	25.3	51.7	1.8	2.3	19.3
West North Central....	80	34	3.6	22.4	3.1	6.5	17.6	36.7	25.2	62.0	2.2	2.5	21.1
Minnesota.....	22	11	1.6	10.6	1.4	3.0	8.4	17.7	10.9	28.8	1.0	0.9	6.7
Iowa.....	22	6	0.6	3.8	0.6	1.0	3.0	5.8	4.9	10.6	0.5	0.3	2.5
Missouri.....	25	13	1.1	6.8	1.0	2.0	5.2	11.2	7.6	18.8	0.6	1.2	9.7
South Atlantic.....	51	16	0.8	4.1	0.7	1.4	3.2	7.3	4.8	12.0	0.7	0.8	5.0
Maryland.....	4	2	0.2	1.0	0.1	0.3	0.7	1.7	0.5	2.2	(D)	0.1	1.0
Florida.....	17	4	0.2	0.8	0.2	0.3	0.6	1.5	0.8	2.4	0.1	0.1	0.7
East South Central....	24	12	1.9	13.5	1.6	3.1	10.5	20.6	25.2	45.6	5.2	1.4	15.8
Tennessee.....	13	4	0.2	1.0	0.2	0.4	0.8	2.1	1.3	3.4	0.1	(D)	(D)
West South Central....	62	15	1.2	6.0	1.0	2.1	4.9	11.7	7.8	19.1	1.3	1.1	11.6
Oklahoma.....	9	1	0.1	0.3	0.1	0.1	0.3	0.5	0.4	0.9	(Z)	(D)	(D)
Texas.....	43	8	0.6	3.0	0.5	1.1	2.5	6.0	3.0	9.0	(D)	0.5	3.3
Mountain.....	21	7	0.3	1.7	0.3	0.5	1.3	3.6	1.6	5.1	0.2	0.1	0.7
Colorado.....	11	3	0.1	0.7	0.1	0.3	0.7	1.5	0.7	2.2	(D)	(D)	(D)
Pacific.....	159	71	5.1	33.8	4.3	8.7	26.0	59.6	36.7	95.6	2.8	3.7	35.2
Washington.....	8	4	0.2	1.3	0.2	0.3	1.0	2.0	1.5	3.5	0.1	(D)	(D)
Oregon.....	12	6	0.5	3.4	0.5	0.9	2.7	5.9	4.2	10.1	(D)	0.2	1.5
California.....	139	61	4.4	29.1	3.7	7.6	22.3	51.6	31.0	82.0	(D)	3.5	32.9

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3361- --	ALUMINUM CASTINGS, TOTAL.....		(X)	891.7	(X)	607.0
	Aluminum and aluminum-base alloy castings (except cast aluminum cooking utensils): <sup>1</sup>					
33610 11	Sand.....	Million lbs...	<sup>e</sup> 193.9	208.5	152.3	146.3
33610 31	Permanent and semipermanent mold.....	...do.....	<sup>e</sup> 252.2	169.2	194.7	113.4
33610 41	Die.....	...do.....	651.4	392.0	476.7	266.7
33610 51	Investment.....	1,000 lbs....	(NA)	22.1	1.4	9.7
33610 61	Other.....	Million lbs...	(NA)	19.8	(NA)	21.3
	Cast aluminum finished products:					
33610 71	Pressure cookers, household (except electric).....		(X)	1.5	(X)	10.1
33610 75	Cast aluminum cooking utensils (except electric).....		(X)	6.5		
33610 00	Aluminum and aluminum-base alloy castings, n.s.k. (Represents principally establishments with 10 employees or more in 1967. See Note.).....		(X)	57.0	(X)	39.5
33610 02	Aluminum and aluminum-base alloy castings, n.s.k. (Represents principally establishments with fewer than 10 employees in 1967. See Note.).....		(X)	15.1		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

<sup>e</sup>From 10 to 30 percent of this figure was estimated. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

These data differ from the quantities published in Current Industrial Reports Series M33E "Nonferrous Castings" in that no data are included for castings produced by captive foundry departments of plants classified in other industries. In addition, certain products are reported as castings in the monthly survey which in the census of manufactures are classified as finished products in other industries.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	1967		1963	
		Quantity (1,000 short tons)	Delivered cost (million dollars)	Quantity (1,000 short tons)	Delivered cost (million dollars)
	INDUSTRY 3361.--ALUMINUM CASTINGS				
	Materials, parts, containers, and supplies, total.....	(X)	364.1	(X)	262.0
331051	Pig iron (excluding silvery iron).....	( <sup>1</sup> )	( <sup>1</sup> )	2.9	0.2
	Nonferrous metal alloys and ferroalloys (ingot, pig, shot, etc.):				
333404	Aluminum, unalloyed.....	28.6	14.5	22.0	10.1
333405	Aluminum-base alloys.....	385.7	179.4	338.5	147.7
333121	Copper, unalloyed (cathodes, ingot, cakes, slabs, etc.).....	( <sup>2</sup> )	( <sup>2</sup> )	0.7	0.4
334123	Copper-base alloy raw materials (ingot, billets, shot, waffle, hardeners, etc.)...	9.6	9.1	8.7	5.3
333348	Zinc and zinc-base alloys.....	69.5	22.4	49.6	13.8
333973	Magnesium and magnesium-base alloys.....	3.9	2.5	3.9	2.4
331312	Ferromanganese.....	( <sup>1</sup> )	( <sup>1</sup> )		
331309	Other ferroalloys, including silvery iron.....	( <sup>1</sup> )	( <sup>1</sup> )	0.7	0.3
	Scrap (purchased scrap only):				
999811	Iron and steel.....	( <sup>1</sup> )	( <sup>1</sup> )	2.1	0.1
999808	Aluminum and aluminum-base alloy.....	28.9	9.0	18.7	5.6
999812	Copper and copper base-alloy.....	( <sup>1</sup> )	( <sup>1</sup> )	0.6	0.3
144503	Sand.....	( <sup>1</sup> )	( <sup>1</sup> )	(NA)	(NA)
325501	Clay refractories.....	( <sup>1</sup> )	( <sup>1</sup> )		
329701	Nonclay refractories.....	( <sup>1</sup> )	( <sup>1</sup> )		
970099	All other materials and components, parts, containers, and supplies consumed.....	(X)	92.6	(X)	52.1
976000	Materials, parts, components, and supplies, n.s.k. <sup>3</sup> .....	(X)	34.6	(X)	23.6

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Included with material code 970099, "All other materials and components, etc." The value of these individual materials is less than \$2.5 million.<sup>2</sup>Included with material code 970099, "All other materials and components etc," to avoid disclosing operations of individual companies.<sup>3</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3361, these small establishments accounted for approximately 1 percent of payrolls and 2 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.

# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

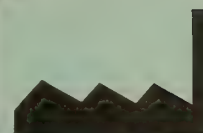
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-33D-6

## INDUSTRY SERIES

### Brass, bronze, and copper castings

SIC Code 3362

**preliminary  
report**

The Brass, Bronze, Copper, Copper-Base Alloy Castings Industry includes establishments primarily engaged in manufacturing castings and die castings of copper and copper-base alloy.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Brass, Bronze, and Copper Castings Industry amounted to \$438.0 million, an increase of 54 percent compared with 1963. Value added by manufacture at \$223.2 million in 1967 was 56 percent more than value added in 1963. Average employment in the industry showed an increase

of 16 percent from 1963 to a total of 17.7 thousand employees in 1967.

Of the \$438.0 million total value of shipments and other receipts of establishments classified as brass, bronze, and copper castings, \$87.0 million were products primary to other industries; and \$13.3 million were receipts for miscellaneous activities. The industry shipments of primary products represented 79 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 84 percent in 1963.

The total value of brass, bronze, and copper castings shipped by all producers in 1967 was \$412.3 million of which \$337.7 million, or 82

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3362.--BRASS, BRONZE, AND COPPER CASTINGS														
1967 Census....	532	205	17.7	118.1	14.8	30.2	88.0	223.2	214.3	438.0	12.4	52.1	79	82
1966 ASM <sup>1</sup> .....	(NA)	(NA)	17.9	112.7	15.2	31.9	84.3	216.9	239.4	451.7	9.9	46.1	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	16.3	101.8	13.4	28.5	74.5	177.0	193.7	369.4	7.5	39.3	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	15.7	92.7	13.0	27.4	69.9	158.3	160.2	317.2	*8.3	38.5	(NA)	(NA)
1963 Census.....	549	193	15.3	86.3	12.8	26.1	65.1	144.1	144.4	287.5	5.4	32.6	84	78
1962 ASM <sup>1</sup> .....	(NA)	(NA)	17.8	97.6	14.6	28.8	71.0	155.2	150.2	304.4	5.3	33.9	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	17.2	89.0	14.0	27.3	64.8	149.6	137.6	283.8	3.8	31.9	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	16.8	85.7	13.6	26.6	62.3	137.4	133.4	274.5	4.9	28.6	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	16.4	81.0	13.8	27.3	61.9	131.7	136.6	267.4	4.5	27.0	(NA)	(NA)
1958 Census <sup>2</sup> ....	665	209	14.9	70.5	12.3	23.5	52.8	109.7	111.6	221.0	5.1	26.0	85	81

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 3 and 4, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued January 1970

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**

percent, were shipped by plants classified in industry 3362, Brass, Bronze, and Copper Castings, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 78 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3362, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

#### M33E, Nonferrous Castings.

The data that are shown in that monthly Current Industrial Report, however, are not directly comparable to the data shown in this report in that no data are included in this report for castings produced by captive foundry departments of plants classified in other industries. In addition, certain products are reported as castings in the monthly survey which are, in the census of manufactures, classified as finished products in other industries. Also, the data for the Current Industrial Reports need further review. Revised Current Industrial Reports data will be published at a later date.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3362.--BRASS, BRONZE, AND COPPER CASTINGS													
United States, total.....	532	205	17.7	118.1	14.8	30.2	88.0	223.2	214.3	438.0	12.4	15.3	144.1
New England.....	68	26	1.5	9.2	1.3	2.5	6.8	15.4	13.5	28.9	0.4	1.5	12.0
Rhode Island.....	10	2	0.1	0.7	0.1	0.2	0.5	1.9	1.1	2.9	(Z)	(D)	(D)
Connecticut.....	22	10	0.6	3.9	0.5	1.0	2.6	5.8	5.5	11.4	0.2	0.4	3.4
Middle Atlantic.....	134	50	5.8	38.1	4.8	9.8	27.8	65.8	58.7	125.0	2.8	5.2	46.7
New York.....	51	19	1.4	8.8	1.2	2.3	6.7	14.5	14.9	29.2	0.4	1.2	11.7
New Jersey.....	28	12	0.8	5.4	0.6	1.3	3.9	8.8	9.2	18.5	0.3	0.8	7.1
Pennsylvania.....	55	19	3.6	23.9	3.0	6.2	17.3	42.5	34.6	77.3	2.1	3.2	27.9
East North Central....	180	77	6.9	49.4	5.8	11.7	37.2	99.1	93.7	193.1	8.3	5.5	54.7
Ohio.....	52	20	1.9	14.0	1.6	3.2	10.2	24.9	27.2	52.2	1.0	1.6	15.9
Illinois.....	51	21	1.5	9.9	1.3	2.6	7.9	21.8	20.5	42.0	1.8	1.3	11.4
Michigan.....	36	16	1.3	10.3	1.1	2.3	8.0	18.0	17.4	35.4	1.1	1.1	13.1
West North Central....	23	10	0.7	4.1	0.5	1.0	3.0	9.8	12.6	22.2	0.3	0.7	8.4
Missouri.....	12	5	0.3	2.0	0.3	0.5	1.4	4.2	6.1	10.3	0.2	0.2	3.0
South Atlantic.....	17	5	0.3	2.0	0.3	0.5	1.5	3.0	2.9	5.7	0.1	(D)	(D)
West Virginia.....	5	2	0.2	1.1	0.1	0.3	0.8	1.5	1.5	2.9	(D)	(D)	(D)
East South Central....	8	5	0.3	1.8	0.3	0.6	1.4	3.2	4.1	7.3	(D)	(D)	(D)
West South Central....	22	8	0.8	4.1	0.7	1.5	3.1	9.8	10.0	20.5	1.0	(D)	(D)
West.....	80	24	1.3	9.4	1.2	2.4	7.1	17.0	18.6	35.3	1.3	1.2	11.7
California.....	57	19	1.0	7.4	1.0	1.9	5.6	14.0	15.9	29.7	(D)	1.0	9.7

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3362- --	BRASS, BRONZE, AND COPPER CASTINGS, TOTAL.....		(X)	412.3	(X)	299.8
	Copper and copper-base alloy castings (except bearings and bushings): <sup>1</sup>					
33620 11	Sand.....	Million pounds.	249.7	244.6	278.6	192.0
33620 31	Permanent and semipermanent mold.....	..do.....	15.2	9.3	14.4	13.9
33620 41	Die.....	..do.....	20.2	16.0	6.5	7.4
33620 51	Investment.....	1,000 pounds...	(NA)	10.3	(NA)	4.0
33620 61	Other.....	..do.....	27.6	29.9	28.1	21.4
33620 71	Copper-base alloy bearings and bushings, nonmachined.....		(X)	46.7	(X)	39.1
33620 00	Copper and copper-base alloy castings, n.s.k. (For establishments with 10 or more employees in 1967. See Note.).....		(X)	45.8		
33620 02	Copper and copper-base alloy castings, n.s.k. (For establishments with fewer than 10 employees in 1967. See Note.).....		(X)	9.7	(X)	22.1

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>These data differ from the quantities published in Current Industrial Reports Series M33E, Nonferrous Castings, in that no data are included for castings produced by captive foundry departments of plants classified in other industries. In addition, certain products are reported as castings in the monthly survey which in the Census of Manufactures are classified as finished products in other industries. Also the data for the Current Industrial Reports need further review. Revised Current Industrial Reports data will be published at a later date.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	1967		1963	
		Quantity (1,000 short tons)	Delivered cost (million dollars)	Quantity (1,000 short tons)	Delivered cost (million dollars)
	INDUSTRY 3362.--BRASS, BRONZE, COPPER CASTINGS				
	Materials, parts, containers, and supplies, total.....	(X)	190.9	(X)	132.1
331051	Pig iron (excluding silvery iron).....	7.2	0.5	3.9	0.3
	Nonferrous metal alloys and ferroalloys (ingot, pig, shot, etc.):				
333404	Aluminum, unalloyed.....	8.0	4.3	1.6	0.7
333405	Aluminum-base alloys.....	19.6	9.9	8.1	3.9
333121	Copper, unalloyed (cathodes, ingot, cakes, slabs etc.).....	16.5	13.0	13.2	8.1
334123	Copper-base alloy raw materials (ingot, billets, shot, waffle, hardeners, etc.)..	72.3	67.5	73.4	43.5
333348	Zinc and zinc-base alloys.....	1.6	0.5	1.3	0.3
333973	Magnesium and magnesium-base alloys.....	0.4	0.2	0.1	(Z)
331213	Ferromanganese.....				
331309	Other ferroalloys, including silvery iron.....	( <sup>1</sup> )	( <sup>1</sup> )	3.3	1.9
	Scrap:				
999811	Iron and steel purchased scrap.....	26.2	1.0	6.4	0.3
	Nonferrous metal scrap:				
999808	Aluminum and aluminum-base alloy.....	2.8	1.1	0.2	0.1
999812	Copper and copper-base alloy.....	52.8	36.5	52.3	26.1
970099	All other materials and components, parts, containers, and supplies consumed.....	(X)	41.8	(X)	25.9
976000	Materials, parts, components, and supplies, n.s.k. <sup>2</sup> .....	(X)	14.6	(X)	20.9

n.s.k. Not specified by kind. (X) Not applicable. (Z) Less than 0.1 when rounded.

<sup>1</sup>Included with material code 970099, all other materials, parts, etc.

<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



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these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

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The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.

# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

**Textile mill products • Apparel and leather • Chemicals, rubber, and plastics • Machinery and equipment • Primary metals • Intermediate metal products • Processed foods • Lumber, furniture, and paper products • Stone, clay, and glass products.**

A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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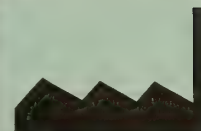
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OFFICIAL BUSINESS



# 1967 CENSUS OF MANUFACTURES



MC67(P)-33D-7

## INDUSTRY SERIES

### Nonferrous castings, n.e.c.

SIC Code 3369

**preliminary  
report**

The Nonferrous Castings, Not Elsewhere Classified, Industry includes establishments primarily engaged in manufacturing castings and die castings of nonferrous materials, except aluminum, copper, and copper-base alloys.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Nonferrous Castings, N.E.C., Industry amounted to \$516.0 million, an increase of 72 percent compared with 1963. Value added by manufacture at \$296.0 million in 1967 was 76 percent more than value added in 1963. Average

employment in the industry showed an increase of 41 percent from 1963 to a total of 24,9 thousand employees in 1967.

Of the \$516.0 million total value of shipments and other receipts of establishments classified as nonferrous castings, n.e.c., \$77.0 million were products primary to other industries; and \$9.7 million were receipts for miscellaneous activities. The industry shipments of primary products represented 85 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 78 percent in 1963.

The total value of nonferrous castings, n.e.c., shipped by all producers in 1967 was \$543.8

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3369. --NONFERROUS CASTINGS, N.E.C.														
1967 Census....	357	176	24.9	165.5	20.7	42.5	122.2	296.0	220.9	516.0	17.3	47.3	85	79
1966 ASM <sup>1</sup> .....	(NA)	(NA)	22.8	149.9	19.4	42.4	116.9	274.5	227.7	498.3	19.5	41.2	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	18.8	114.2	15.9	37.0	87.6	195.1	177.0	369.8	10.5	29.7	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	17.8	105.9	14.9	31.5	81.2	186.5	144.1	329.6	*12.7	25.4	(NA)	(NA)
1963 Census....	391	165	17.7	102.9	14.8	30.3	78.4	168.5	134.3	302.7	6.8	23.3	78	75
1962 ASM <sup>1</sup> .....	(NA)	(NA)	15.8	90.4	13.2	27.1	69.4	149.8	110.5	259.4	5.8	19.2	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	14.6	81.7	12.0	24.2	60.9	127.8	94.1	222.2	*4.1	18.5	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	17.1	92.6	14.2	28.7	69.0	150.2	109.0	260.2	7.8	22.5	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	18.3	98.1	15.5	31.3	74.7	151.6	116.9	267.7	6.7	25.1	(NA)	(NA)
1958 Census <sup>2</sup> ...	345	136	17.3	89.2	14.3	27.6	66.3	135.3	98.7	234.6	5.0	23.1	78	77

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 2 and 2, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary****Rocco C. Siciliano, Under Secretary****BUREAU OF THE CENSUS George Hay Brown, Director**



million of which \$430.2 million, or 79 percent, were shipped by plants classified in industry 3369, Nonferrous Castings, N.E.C., while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 75 percent in 1963.

extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

These ratios were developed to measure the

For an explanation of the terms used in the tables, see appendix at the end of this report.

#### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3369, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

M33E, Nonferrous Castings.

The data that are shown in this monthly Current Industrial Report, however, are not comparable to the data shown in this report in that no data are included in this report for castings produced by captive foundry departments of plants classified in other industries. In addition, certain products are reported as castings in the monthly survey which are, in the census of manufactures, classified as finished products in other industries.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3369. --NONFERROUS CASTINGS, N.E.C.													
United States, total.....	357	176	24.9	165.5	20.7	42.5	122.2	296.0	220.9	516.0	17.3	17.7	168.5
New England.....	28	10	0.6	4.2	0.5	1.1	2.9	8.0	5.3	13.3	0.5	0.5	4.5
Massachusetts.....	7	2	0.1	1.1	0.1	0.3	0.8	2.8	1.2	4.0	0.2	0.2	1.6
Connecticut.....	12	6	0.3	2.3	0.3	0.6	1.6	3.7	3.2	6.9	(D)	0.2	2.2
Middle Atlantic.....	85	39	4.5	29.1	3.6	7.5	20.9	47.4	30.6	76.9	3.1	3.8	33.1
New York.....	49	22	1.8	12.0	1.5	3.0	8.7	18.3	13.3	30.8	1.3	1.6	14.8
New Jersey.....	23	13	2.2	14.4	1.7	3.7	9.9	24.8	14.3	39.0	1.7	1.7	14.5
Pennsylvania.....	13	4	0.4	2.6	0.4	0.8	2.2	4.2	3.0	7.1	0.1	0.5	3.8
East North Central....	142	80	14.8	101.5	12.2	25.0	75.2	183.8	138.4	322.4	9.7	9.4	92.4
Ohio.....	25	14	3.1	21.5	2.4	5.4	15.7	44.3	22.6	67.3	2.3	1.7	15.9
Illinois.....	48	21	3.4	24.5	2.9	6.1	18.6	36.7	37.0	73.4	2.0	2.8	28.1
Michigan.....	53	36	6.1	41.8	5.1	10.1	30.6	76.6	57.6	134.4	4.3	4.0	38.3
West North Central....	23	12	1.5	10.2	1.3	2.7	7.6	19.0	18.6	37.5	1.4	0.9	8.0
Missouri.....	10	3	0.4	3.0	0.4	0.7	2.3	5.6	3.5	9.1	0.3	0.4	3.2
South Atlantic.....	9	3	0.2	1.0	0.2	0.4	0.7	2.3	1.5	3.8	(Z)	(D)	(D)
East South Central....	7	4	0.4	2.1	0.3	0.7	1.2	4.3	3.3	7.5	(D)	(D)	(D)
West South Central....	8	5	0.5	2.8	0.5	0.9	2.3	5.2	5.9	11.3	(D)	(D)	(D)
West.....	55	23	2.4	14.7	2.1	4.1	11.4	26.0	17.4	43.4	2.1	2.3	25.8
California.....	47	20	2.1	13.3	1.9	3.6	10.2	23.8	16.0	39.9	(D)	2.2	24.6

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (million pounds)	Value (million dollars)	Quantity (million pounds)	Value (million dollars)
3369- --	NONFERROUS CASTINGS, N.E.C. TOTAL <sup>1</sup> .....	(X)	543.8	(NA)	306.5
33691 --	Zinc and zinc-base alloy castings.....	486.9	315.8	(NA)	206.4
33691 51	Die.....	459.6	304.4	372.4	201.9
33691 61	Other.....	<sup>e</sup> 27.3	11.4	(NA)	4.5
33699 --	Other nonferrous castings.....	(X)	69.7	(X)	44.2
	Magnesium and magnesium-base alloy castings:				
33699 11	Sand.....	<sup>e</sup> 13.4	50.4	10.0	31.3
33699 31	Die.....	( <sup>2</sup> )	( <sup>2</sup> )	(NA)	7.7
33699 33	Cast anodes.....	(NA)	3.9	(NA)	5.2
33699 41	Other, including permanent and semipermanent.....	(NA)	15.4	(NA)	
33699 71	Lead and lead-base alloy die castings.....	(NA)	14.8	(NA)	6.7
33699 98	Other nonferrous metal castings, including die castings.....	(X)	91.0	(NA)	35.5
33690 00	Nonferrous castings, n.e.c., n.s.k. (For establishments with more than 10 employees. See Note.).....	(X)	47.5		
33690 02	Nonferrous castings, n.e.c., n.s.k. (For establishments with fewer than 10 employees. See Note.).....	(X)	5.0	(X)	13.7

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

<sup>e</sup>From 10 to 30 percent of this figure was estimated. (NA) Not available. n.e.c. Not elsewhere classified. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>These data differ from the quantities shown in Current Industrial Report series M33E, "Nonferrous castings," in that no data are included for castings produced by captive foundry departments of plants classified in other industries. In addition, certain products are reported as castings in the monthly survey which in the census of manufactures, are classified as finished products in other industries.

<sup>2</sup>These data are included with product code 33699 41, "Other, including permanent and semipermanent magnesium and magnesium-base alloy castings."



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	1967		1963	
		Quantity (1,000 short tons)	Delivered cost (million dollars)	Quantity (1,000 short tons)	Delivered cost (million dollars)
	INDUSTRY 3369.--NONFERROUS CASTINGS, N.E.C.				
	Materials, parts, containers, and supplies, total.....	(X)	170.2	(X)	104.6
331051	Pig iron (excluding silvery iron).....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
	Nonferrous metal alloys and ferroalloys (ingot, pig, shot, etc.):				
333404	Aluminum, unalloyed.....	8.9	3.7	24.5	11.6
333405	Aluminum-base alloy.....	21.3	9.9		
333121	Copper, unalloyed (cathodes, ingot, cakes, slabs, etc.).....	0.3	0.3	1.7	1.3
334123	Copper-base alloy raw materials (ingot, billets, shot, waffle, hardeners, etc.)..	1.6	1.6		
333348	Zinc and zinc-base alloys.....	170.6	54.0	132.1	35.0
333973	Magnesium and magnesium-base alloys.....	4.9	4.4	5.2	3.4
331312	Ferromanganese.....	-	-	4.6	1.0
331309	Other ferroalloys, including silvery iron.....	25.5	7.1		
	Scrap (purchased scrap only):				
999811	Iron and steel.....	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
999808	Aluminum and aluminum-base alloy.....	( <sup>1</sup> )	( <sup>1</sup> )	0.1	(Z)
999812	Copper and copper-base alloy.....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
970099	All other materials and components, parts, containers, and supplies consumed.....	(X)	66.2	(X)	36.6
976000	Materials, parts, containers, and supplies, n.s.k. <sup>3</sup> .....	(X)	23.0	(X)	15.8

- Represents zero. n.s.k. Not specified by kind. (X) Not applicable. (Z) Less than 0.1 when rounded.

<sup>1</sup>Included with material code 970099 "All other materials and components, etc." to avoid disclosing figures for individual companies.<sup>2</sup>Included with material code 970099 "All other materials and components, etc." The value of this individual material consumed is less than \$2.5 million.<sup>3</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3369, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

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# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

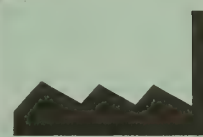
**U.S. DEPARTMENT OF COMMERCE**  
**Bureau of the Census**  
Washington, D.C. 20233

POSTAGE AND FEES PAID  
U.S. DEPARTMENT OF COMMERCE

OFFICIAL BUSINESS

# 1967 CENSUS OF MANUFACTURES

MC67(P)-33E-1



INDUSTRY SERIES

**preliminary  
report**

## Iron and steel forgings

SIC Code 3391

The Iron and Steel Forgings Industry includes establishments primarily engaged in manufacturing iron and steel forgings, with or without the use of dies. These establishments generally operate on a job or order basis, manufacturing forgings for sale to others or for interplant transfer. Establishments which produce iron and steel forgings and which are also engaged in fabricating operations, such as machining, assembling, etc., in manufacturing a specified product are classified in the industry of the specified product. Iron and steel forgings are made to a considerable extent by establishments classified in other industries that produce forgings for incorporation, in the same establishment, into such products as machinery, motor vehicles, etc.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC; Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Iron and Steel Forgings Industry amounted to \$1,254.5 million, an increase of 44 percent compared with 1963. Value added by manufacture at \$601.9 million in 1967 was 52 percent more than value added in 1963. Average employment in the industry showed an increase of 11 percent from 1963 to a total of 40.9 thousand employees in 1967.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
INDUSTRY 3391.--IRON AND STEEL FORGINGS														
1967 Census....	270	188	40.9	344.0	33.1	66.7	264.2	601.9	654.8	1,254.5	44.8	198.7	89	72
1966 ASM <sup>1</sup> .....	(NA)	(NA)	41.3	346.3	33.4	70.6	269.4	594.9	687.0	1,273.1	34.6	210.8	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	39.1	307.3	31.8	66.1	242.1	512.5	605.3	1,105.8	22.7	192.6	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	36.6	276.3	29.5	60.2	214.4	440.5	531.9	961.2	34.1	165.8	(NA)	(NA)
1963 Census....	272	189	36.3	259.8	29.2	58.3	198.3	395.3	470.9	868.9	17.5	125.0	89	69
1962 ASM <sup>1</sup> .....	(NA)	(NA)	40.9	282.1	33.0	66.0	214.1	456.5	484.0	928.8	14.6	142.6	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	39.5	257.9	31.3	60.7	189.5	380.3	414.7	789.1	17.5	146.9	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	41.0	261.7	32.8	64.2	197.3	393.7	470.4	854.8	15.0	141.4	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	40.8	260.4	32.9	66.0	198.9	408.1	462.3	873.3	13.1	132.9	(NA)	(NA)
1958 Census <sup>2</sup> ....	302	190	37.7	220.5	30.2	56.7	164.1	315.9	359.7	687.3	14.3	133.0	86	72

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.  
(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued November 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**



Of the \$1,254.5 million total value of shipments and other receipts of establishments classified as iron and steel forgings, \$128.7 million were products primary to other industries; and \$28.8 million were receipts for miscellaneous activities. The industry shipments of primary products represented 89 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 89 percent in 1963.

The total value of iron and steel forgings shipped by all producers in 1967 was \$1,527.4 million of which \$1,097.0 million, or 72 percent,

were shipped by plants classified in industry 3391, Iron and Steel Forgings, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 69 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3391, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-33C, Commercial Steel Forgings.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3391.--IRON AND STEEL FORGINGS													
United States, total.....	270	188	40.9	344.0	33.1	66.7	264.2	601.9	654.8	1,254.5	44.8	36.3	395.3
New England.....	14	11	3.3	27.1	2.4	4.9	18.5	42.2	41.6	82.3	2.9	3.2	26.2
Middle Atlantic.....	55	43	5.7	41.1	4.7	9.5	32.3	81.5	82.6	162.3	(D)	5.1	50.6
Pennsylvania.....	28	26	3.8	28.2	3.2	6.6	22.0	55.8	60.8	115.4	3.8	3.0	29.6
East North Central....	129	99	28.6	249.6	23.4	46.9	195.4	422.3	469.7	893.6	30.8	25.6	289.0
Ohio.....	39	31	6.8	57.2	5.7	11.5	45.6	102.4	115.0	217.4	13.2	6.5	69.4
Illinois.....	35	24	5.6	49.2	4.5	9.3	37.0	86.2	93.8	180.2	4.5	4.8	58.1
Michigan.....	33	29	5.8	54.4	4.9	10.0	43.4	92.3	110.6	202.7	3.8	5.1	62.5
West North Central....	9	1	0.1	0.5	0.1	0.1	0.4	0.8	0.8	1.6	0.1	0.1	0.5
South.....	32	20	1.7	11.9	1.3	2.9	8.3	26.9	27.5	53.0	(D)	1.2	11.3
West South Central..	21	15	1.3	9.0	1.0	2.2	6.1	20.9	21.6	41.7	(D)	(D)	(D)
West.....	31	14	1.5	13.7	1.2	2.5	9.4	28.2	32.7	61.6	3.1	1.2	17.8
California.....	26	12	1.4	12.4	1.1	2.2	8.6	26.0	31.2	57.4	(D)	1.1	17.0

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000 short tons)	Value (million dollars)	Quantity (1,000 short tons)	Value (million dollars)
3391- --	IRON AND STEEL FORGINGS, TOTAL.....	(NA)	1,527.4	(NA)	1,075.6
33911 --	Drop, upset, and press steel forgings (closed die) <sup>2</sup> .....	(X)	1,041.4	(X)	764.8
33911 11	Carbon steel.....	1,312.0	560.4	993.9	393.8
33911 31	Alloy steel, except stainless.....	722.6	432.2	567.0	324.6
33911 51	Stainless steel.....	10.9	42.6	8.5	34.8
33911 00	Drop, upset, and press steel forgings, not specified by grade.....	(X)	6.2	(X)	11.6
33919 --	Open-die hammer and press forgings <sup>2</sup> .....	(X)	442.8	(X)	294.4
33129 --	Made in steel works (industry 3312).....	(NA)	195.2	(NA)	120.7
33919 --	Made in steel forgings (industry 3391) and other industries.....	(NA)	247.6	(NA)	173.7
	Open-die hammer forgings:				
33129 21	Carbon steel.....	123.9	56.1	118.9	52.5
33919 21	Alloy steel (except stainless).....	57.8	64.3	52.0	58.5
33129 23	Made in industry 3312.....	10.0	12.5	12.5	19.6
33919 22	Made in industry 3391 and other industries.....	47.8	51.8	39.5	38.9
33129 25	Stainless steel.....	8.5	21.4	4.1	10.2
33919 23	Open-die press forgings:				
33129 61	Carbon steel.....	164.6	74.1	127.2	45.6
33919 41	Made in industry 3312.....	46.5	24.7	21.3	11.1
33129 61	Made in industry 3391 and other industries.....	118.1	49.4	105.8	34.4
33129 63	Alloy steel, except stainless.....	248.8	199.3	130.0	101.1
33919 42	Made in industry 3312.....	135.6	137.9	49.8	52.5
33129 63	Made in industry 3391 and other industries.....	113.2	61.4	80.2	48.6
33919 42	Stainless steel.....	3.7	8.2	2.5	5.1
33129 65	Open-die hammer and press forgings, not specified by grade.....	(X)	19.4	(X)	21.4
33919 43	Iron and steel forgings, n.s.k. (For establishments with 10 or more employees in 1967. See Note.).....	(X)	41.6	(X)	16.4
33910 00	Iron and steel forgings, n.s.k. (For establishments with fewer than 10 employees in 1967. See Note.).....	(X)	1.6		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Includes product class 33129, open die hammer and press forgings made in blast furnaces and steel mills.

<sup>2</sup>These figures are not strictly comparable with tonnage figures shown in Current Industrial Reports Series MA-33C, Commercial Steel Forgings, in that the latter include only forgings for sale, whereas the 1967 and 1963 Census of Manufactures also include interplant transfers of forgings. Accordingly, a direct comparison with the Current Industrial Reports Series is not possible. Forgings produced and consumed are not included in either the census or the Current Industrial Reports figures. The annual totals in the Current Industrial Reports survey for commercial steel forgings were as follows:

Item	1967 (1,000 short tons)	1963 (1,000 short tons)
Closed die (drop, upset and press) forgings:		
Carbon.....	1,010.8	785.3
Alloy, including stainless.....	524.5	391.3
Open die hammer and press forgings:		
Carbon.....	187.9	156.1
Alloy, including stainless.....	211.9	219.9

1967 CENSUS OF MANUFACTURES  
TABLE 4. **Materials Consumed, by Kind: 1967 and 1963**

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3391.--IRON AND STEEL FORGINGS					
	Materials, containers, and supplies, total.....		(X)	562.1	(X)	408.3
	Carbon steel:					
331041	Ingots.....	1,000 short tons.	106.7	13.9	12.5	1.5
331042	Blooms, billets, and slabs.....	..do.....	378.1	52.3	378.1	52.9
331043	Bars.....	..do.....	923.6	144.1	577.9	96.5
	Alloy steel (except stainless):					
331044	Ingots.....	..do.....	16.2	3.8	19.0	4.2
331045	Blooms, billets, and slabs.....	..do.....	210.4	65.3	182.2	53.9
331046	Bars.....	..do.....	396.4	97.2	351.5	85.2
	Stainless steel:					
331047	Ingots.....	..do.....	0.3	0.5	1.0	1.4
331048	Blooms, billets, and slabs.....	..do.....	13.4	15.4	7.8	8.7
331049	Bars.....	..do.....	6.0	7.7	6.3	7.4
	Aluminum and aluminum-base alloy:					
333471	Ingots.....	..do.....	0.5	0.4	( <sup>1</sup> )	( <sup>1</sup> )
335208	Mill shapes.....	Million lbs.....	( <sup>2</sup> )	( <sup>2</sup> )	3.1	1.9
	Titanium and titanium-base alloy:					
335600	Ingots.....	..do.....	17.8	42.4	3.9	10.9
335601	Mill shapes.....	..do.....				
970099	All other materials, and components, parts, containers, and supplies consumed.....		(X)	73.5	(X)	68.7
976000	Materials, n.s.k. <sup>3</sup> .....		(X)	45.6	(X)	15.0

n.s.k. Not specified by kind.

(X) Not applicable.

<sup>1</sup>Included with material code 970099 "All other materials and components, etc." to avoid disclosing operations of individual companies.

<sup>2</sup>Included with material code 970099 "All other materials and components, etc." The value of this item is less than \$2.5 million.

<sup>3</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3391, these small establishments accounted for less than 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

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**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-33E-2

## INDUSTRY SERIES

### Nonferrous forgings

SIC Code 3392

**preliminary  
report**

The Nonferrous Forgings Industry includes establishments primarily engaged in manufacturing nonferrous forgings, with or without the use of dies. These establishments generally operate on a job or order basis, manufacturing forgings for sale to others or for interplant transfer. Establishments which produce nonferrous forgings and which are also engaged in fabricating operations, such as machining, assembling, etc., in manufacturing a specified product are classified in the industry of the specified product. Nonferrous forgings are made to a considerable extent by establishments classified in other industries that produce forgings for incorporation, in the same establishment, into such products as machinery, motor vehicles, etc.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Nonferrous Forgings Industry amounted to \$365.6 million, an increase of 122 percent compared with 1963. Value added by manufacture at \$166.2 million in 1967 was 134 percent more than value added in 1963. Average employment in the industry showed an increase of 75 percent from 1963 to a total of 11,0 thousand employees in 1967.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3392.—NONFERROUS FORGINGS														
1967 Census....	42	32	11.0	95.5	8.2	18.1	66.9	166.2	194.7	365.6	33.4	75.9	63	65
1966 ASM <sup>1</sup> .....	(NA)	(NA)	9.6	77.8	7.3	16.1	56.5	145.6	178.1	311.4	16.5	68.1	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	7.6	59.8	5.6	12.4	42.1	105.4	124.7	220.6	13.0	49.0	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	7.2	56.9	5.4	12.0	40.0	88.5	110.5	196.1	13.1	38.1	(NA)	(NA)
1963 Census.....	34	19	6.3	47.6	4.6	10.1	32.5	71.4	93.4	165.1	4.7	34.3	69	55
1962 ASM <sup>1</sup> .....	(NA)	(NA)	*7.0	*49.0	*5.4	*11.1	*38.3	*78.1	*99.7	*175.3	*4.0	30.0	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	5.4	40.0	4.1	8.4	30.4	47.2	79.2	124.6	*4.7	28.1	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	*5.4	*38.4	*4.2	*7.8	*28.0	*43.2	*72.8	*116.6	*2.9	23.7	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	*4.7	*30.1	*3.6	*7.2	*21.6	*37.9	*65.6	*103.5	*1.3	21.5	(NA)	(NA)
1958 Census <sup>2</sup> ....	28	19	4.6	27.8	3.5	6.8	19.4	36.8	58.1	98.7	2.0	20.9	85	60

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 3 and 3, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued August 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE**    **Maurice H. Stans, Secretary**  
**Rocco C. Siciliano, Under Secretary**  
**BUREAU OF THE CENSUS**

Of the \$365.6 million total value of shipments and other receipts of establishments classified as nonferrous forgings, \$126 million were products primary to other industries; and \$14 million were receipts for miscellaneous activities. The industry shipments of primary products represented 63 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 69 percent in 1963.

The total value of nonferrous forgings shipped by all producers in 1967 was \$345.6 million of which \$226 million, or 65 percent, were shipped by

plants classified in industry 3392, Nonferrous Forgings, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 55 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

(See Appendix, Explanation of Terms.)

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
INDUSTRY 3392.-NONFERROUS FORGINGS													
United States, total.....	42	32	11.0	95.5	8.1	18.1	66.9	166.2	194.7	365.6	33.4	6.3	71.4
California.....	12	11	2.4	20.6	1.8	4.1	14.2	39.1	42.6	84.4	7.9	0.8	9.7

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (short tons)	Value (million dollars)	Quantity (short tons)	Value (million dollars)
3392- --	NONFERROUS FORGINGS, TOTAL.....	(X)	345.6	(X)	198.4
33920 11	Copper and copper-base alloy.....	26.4	50.1	30.3	44.9
	Aluminum and aluminum-base alloy:				
33920 33	Closed-die.....	62.6	158.5	34.8	89.8
33920 35	Open-die.....	16.8	32.8	5.3	9.7
33920 51	Magnesium and magnesium-base alloy.....	0.2	2.0	0.3	2.3
33920 61	Titanium and titanium-base alloy.....	5.4	61.2	2.2	33.0
33920 98	Other nonferrous metal forgings.....	(X)	36.5	(X)	15.9
33920 00	Nonferrous forgings, n.s.k. (For companies with 10 or more employees. See Note.).....	(X)	4.0	(X)	2.8
33920 02	Nonferrous forgings, n.s.k. (For companies with less than 10 employees. See Note.).....	(X)	0.5		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind. (X) Not applicable.



TABLE 4. **Materials Consumed, by Kind: 1967 and 1963**

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3392.—NONFERROUS FORGINGS					
	Materials, containers, and supplies, total.....		(X)	174.8	(X)	85.3
	Carbon steel:					
331041	Ingots.....	1,000 short tons	36.4	18.6	23.8	13.1
331042	Blooms, billets, and slabs.....	do.				
331043	Bars.....	do.				
	Alloy steel (except stainless):					
331044	Ingots.....	do.				
331045	Blooms, billets, and slabs.....	do.				
331046	Bars.....	do.				
	Stainless steel:					
331047	Ingots.....	do.	18.2	8.6	(NA)	(NA)
331048	Blooms, billets, and slabs.....	do.				
331049	Bars.....	do.				
335129	Copper and copper-base alloy forging stock.....	Million lbs....	18.2	8.6	(NA)	(NA)
	Aluminum and aluminum-base alloy:					
333471	Ingots.....	1,000 short tons	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
335208	Mill shapes.....	Million lbs....	88.3	46.8	66.8	26.1
	Titanium and titanium-base alloy:					
335600	Ingots.....	do.	2.9	9.2	1.5	5.0
335601	Mill shapes.....	do.				
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	88.2	(X)	40.3
976000	Materials, n.s.k. <sup>2</sup> .....		(X)	3.4	(X)	0.8

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable

<sup>1</sup>The value for this material is included with material code 970099, "All other materials and components, parts, containers, and supplies consumed," to avoid disclosing operations of individual companies.<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967, this includes estimates for companies that were not mailed report forms.

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3392, these small establishments accounted for less than 1 percent of payrolls and of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

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Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

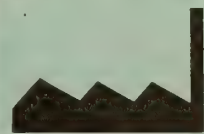
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-33E-3

## INDUSTRY SERIES

### Primary metal products, n.e.c.

SIC Code 3399

**preliminary  
report**

The Primary Metals Products, N.E.C., Industry includes establishments primarily engaged in manufacturing primary metal products, not elsewhere classified, such as nonferrous nails, brads, and spikes; metal powder, flakes, and paste; and establishments primarily engaged in heat treating of steel for the trade.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Primary Metal Products, N.E.C., Industry amounted to \$588.7 million, an increase of 107 percent compared with 1963. Value added

by manufacture at \$379.2 million in 1967 was 97 percent more than value added in 1963. Average employment in the industry showed an increase of 66 percent from 1963 to a total of 24.9 thousand employees in 1967.

Of the \$588.7 million total value of shipments and other receipts of establishments classified as primary metal products, n.e.c., \$21.5 million were products primary to other industries; and \$63.3 million were receipts for miscellaneous activities. The industry shipments of primary products represented 96 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 93 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3399.--PRIMARY METAL PRODUCTS, N.E.C.														
1967 Census....	960	372	24.9	181.5	19.9	41.7	125.7	379.2	212.3	588.7	33.5	48.6	96	85
1966 ASM <sup>1</sup> .....	(NA)	(NA)	17.9	129.3	14.0	30.2	88.0	263.6	137.3	398.8	26.5	35.3	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	16.3	112.7	12.5	28.0	79.1	240.6	108.6	347.2	19.5	28.5	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	15.9	105.7	12.5	26.8	70.7	219.5	105.3	327.5	17.0	25.5	(NA)	(NA)
1963 Census <sup>2</sup> ....	754	218	15.0	94.7	11.5	24.7	65.4	192.2	93.6	284.7	13.5	21.7	93	87
1962 ASM <sup>1</sup> .....	(NA)	(NA)	12.8	74.7	9.6	21.0	48.0	143.7	85.1	231.7	*9.7	15.0	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	11.5	67.2	8.4	17.9	41.6	116.5	67.8	186.9	*7.0	13.3	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	10.5	59.7	8.0	17.1	39.5	104.4	57.9	164.6	*5.8	11.9	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	10.1	56.1	7.8	16.2	37.6	100.0	56.3	158.5	6.3	11.5	(NA)	(NA)
1958 Census <sup>2</sup> ....	581	149	9.8	52.7	7.4	14.8	35.1	90.7	50.1	141.2	5.6	14.4	98	87

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 4 and 3, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

<sup>3</sup>The figures for 1963 are not strictly comparable with those for earlier years. Value added by manufacture for 1963 on a basis comparable with earlier years is \$176.8 million.

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U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director



The total value of primary metal products, n.e.c., shipped by all producers in 1967 was \$590.8 million of which \$503.9 million, or 85 percent, were shipped by plants classified in industry 3399, Primary Metal Products, N.E.C., while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 87 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3399, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

M33-2, Aluminum Ingot and Mill Products.

BDSAF-84, Shipments of Copper-Base Mill and Foundry Products.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total	With 20 employees or more (number)	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
INDUSTRY 3399.--PRIMARY METAL PRODUCTS, N.E.C.													
United States, total.....	960	372	24.9	181.5	19.9	41.7	125.7	379.2	212.3	588.7	33.5	15.0	192.2
New England:													
Connecticut.....	46	14	0.8	5.9	0.6	1.4	3.6	13.4	10.1	21.9	0.9	0.5	7.5
Middle Atlantic.....	181	70	4.9	35.6	3.7	7.7	23.3	78.9	61.4	141.1	(D)	3.0	41.6
Pennsylvania.....	61	24	1.7	12.5	1.3	2.7	8.1	28.2	20.8	49.0	4.1	1.0	14.8
West North Central:													
Minnesota.....	18	6	0.4	2.5	0.3	0.6	1.7	5.0	1.3	6.3	(D)	0.2	2.4
South Atlantic.....	31	8	0.5	3.2	0.4	0.9	2.2	6.4	4.2	10.7	(D)	(D)	(D)
West.....	173	63	3.9	28.3	3.1	6.6	19.8	69.1	20.5	88.8	4.2	1.9	24.3
Arizona.....	6	3	0.1	0.9	0.1	0.2	0.6	3.0	0.4	3.4	0.1	(D)	(D)
California.....	142	54	3.4	24.6	2.7	5.7	17.1	58.8	13.9	72.3	(D)	1.7	21.3

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000 short tons)	Value (million dollars)	Quantity (1,000 short tons)	Value (million dollars)
3399- --	PRIMARY METAL PRODUCTS, N.E.C., TOTAL.....	(X)	590.8	(X)	270.5
33991 --	Metal powders and paste.....	(X)	224.2	(X)	106.8
33991 11	Aluminum and aluminum-base alloy <sup>1</sup> .....	<sup>2</sup> 116.4	84.3	<sup>2</sup> 23.3	24.9
33991 33	Copper and copper-base alloy <sup>3</sup> .....	<sup>4</sup> 25.5	31.1	<sup>4</sup> 25.5	26.4
33991 55	Iron and steel.....	<sup>5</sup> 121.0	36.1	<sup>5</sup> 59.9	15.8
33991 98	Other nonferrous powders.....	(X)	58.0	(X)	37.9
33991 00	Metal powders and paste, not specified by type.....	(X)	14.7	(X)	1.9
33992 --	Other primary metal products, including nonferrous nails, brads, spikes, and staples.....	(X)	43.0	(X)	11.2
33992 11	Nonferrous nails, brads, tacks, and staples.....	7.6	7.6	4.5	4.3
33992 98	Other primary metal products, n.e.c.....	(X)	35.5	(X)	7.0
33992 00	Primary metal products, n.s.k.....				
33996 11	Heat treating of metal for the trade (heat treating, pickling, annealing, etc.) <sup>6</sup> .....	(X)	274.5	(X)	140.3
33990 00	Primary metal products, n.e.c., n.s.k. (For establishments with 10 employees or more. See Note.).....	(X)	38.8	}	12.1
33990 02	Primary metal products, n.e.c., n.s.k. (For establishments with fewer than 10 employees. See Note.).....	(X)	10.3		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.e.c. Not elsewhere classified. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Monthly figures are also shown in Current Industrial Reports Series M33-2, Aluminum Ingot and Mill Products.

<sup>2</sup>Represents aluminum content.

<sup>3</sup>Quarterly figures are also shown in Current Industrial Reports Series BDSAF-84, Shipments of Copper-Base Mill and Foundry Products.

<sup>4</sup>Represents copper content.

<sup>5</sup>Represents iron content.

<sup>6</sup>Consists almost exclusively of receipts for work done on materials owned by others. Includes only work done by establishments classified in industry 3399.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(not applicable to this report)

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3399, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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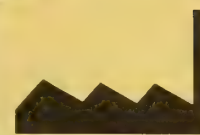








# 1967 CENSUS OF MANUFACTURES



MC67(P)-34A-1

## INDUSTRY SERIES

**preliminary  
report**

### Metal cans

SIC Code 3411

The Metal Cans Industry includes establishments primarily engaged in manufacturing metal cans from purchased materials.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Metal Cans Industry amounted to \$2,901.5 million, an increase of 40 percent compared with 1963. Value added by manufacture at \$1,146.1 million in 1967 was 38 percent more than value added in 1963. Average

employment in the industry showed an increase of 14 percent from 1963 to a total of 60.4 thousand employees in 1967.

Of the \$2,901.5 million total value of shipments and other receipts of establishments classified in the Metal Cans Industry, \$279.1 million were products primary to other industries; and \$83.5 million were receipts for miscellaneous activities. The industry shipments of primary products represented 90 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 97 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3411. --METAL CANS														
1967 Census . . . .	300	242	60.4	475.8	52.4	113.0	394.6	1,146.1	1,792.8	2,901.5	100.1	451.6	90	98
1966 ASM <sup>1</sup> . . . . .	(NA)	(NA)	58.7	446.9	51.0	108.0	367.9	1,043.5	1,584.2	2,631.3	99.5	396.2	(NA)	(NA)
1965 ASM <sup>1</sup> . . . . .	(NA)	(NA)	54.9	422.3	46.5	103.0	349.9	1,011.4	1,417.7	2,395.0	79.4	428.3	(NA)	(NA)
1964 ASM <sup>1</sup> . . . . .	(NA)	(NA)	55.1	400.6	47.5	102.0	330.2	932.4	1,335.2	2,255.7	71.8	337.4	(NA)	(NA)
1963 Census . . . . .	270	206	53.2	377.0	46.1	97.3	311.1	830.5	1,265.2	2,075.0	66.5	321.7	97	98
1962 ASM <sup>1</sup> . . . . .	(NA)	(NA)	53.1	369.3	46.0	98.4	305.4	772.4	1,339.6	2,112.4	60.0	227.4	(NA)	(NA)
1961 ASM <sup>1</sup> . . . . .	(NA)	(NA)	53.4	347.6	46.2	96.0	286.9	758.7	1,343.5	2,095.3	47.9	288.2	(NA)	(NA)
1960 ASM <sup>1</sup> . . . . .	(NA)	(NA)	53.6	333.6	46.4	95.8	275.1	666.2	1,279.2	1,936.4	68.4	283.6	(NA)	(NA)
1959 ASM <sup>1</sup> . . . . .	(NA)	(NA)	53.8	332.1	46.6	97.3	274.0	668.3	1,250.8	1,933.7	50.8	310.1	(NA)	(NA)
1958 Census <sup>2</sup> . . . .	222	189	54.2	303.9	46.9	94.3	249.5	668.6	1,169.7	1,824.1	54.3	335.6	98	99

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued December 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**

The total value of metal cans shipped by all producers in 1967 was \$2,585.9 million of which \$2,538.9 million, or 98 percent, were shipped by plants classified in industry 3411, Metal Cans, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 98 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3411, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

M34D, Metal Cans.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3411. --METAL CANS												
United States, total.....	300	242	60.4	475.8	52.4	113.0	394.6	1,146.1	1,792.8	2,901.5	100.1	53.2	830.5
Northeast.....	72	60	15.6	119.7	13.7	29.9	100.1	285.6	368.9	645.5	26.0	14.0	203.0
New Jersey.....	21	21	7.3	57.2	6.3	14.4	47.0	130.9	179.0	306.5	10.5	5.6	90.5
Pennsylvania.....	15	14	4.4	33.1	4.0	8.4	28.7	77.9	94.9	170.0	8.8	4.4	55.1
North Central.....	82	70	22.0	172.4	18.9	40.2	140.9	399.5	599.0	987.2	30.9	19.3	295.5
Ohio.....	19	17	2.7	19.8	2.2	4.9	15.1	55.4	76.5	131.1	6.8	(D)	(D)
Illinois.....	23	22	10.4	79.7	8.9	18.7	64.6	151.9	200.3	349.1	6.8	10.1	139.3
Wisconsin.....	13	11	2.5	19.9	2.2	4.5	16.6	51.3	91.5	139.8	(D)	2.0	27.9
Minnesota.....	5	4	1.3	11.6	1.1	2.7	9.8	31.3	51.0	80.3	2.5	(D)	(D)
South Atlantic.....	33	26	6.9	54.8	5.9	13.2	46.2	113.0	237.5	347.8	10.6	6.3	84.3
Maryland.....	12	11	3.6	27.8	3.1	6.5	23.4	53.2	110.0	161.9	3.1	3.7	44.2
East South Central....	12	8	0.5	3.0	0.4	0.9	2.6	9.8	25.9	35.1	0.3	0.4	8.4
Tennessee.....	6	4	0.2	1.2	0.2	0.4	1.0	3.8	13.3	17.0	0.1	(D)	(D)
West South Central....	20	15	3.9	30.5	3.3	7.1	24.8	85.8	127.3	211.7	8.2	3.4	50.3
Mountain.....	10	7	0.4	3.6	0.4	0.8	2.7	13.7	29.2	43.3	0.6	0.4	11.5
Pacific.....	71	56	11.2	91.9	9.8	20.9	77.4	238.6	405.1	631.0	23.5	9.5	177.5
Washington.....	8	8	1.0	8.2	0.9	1.9	7.0	23.9	50.7	72.6	2.7	0.8	18.5
California.....	52	41	9.3	77.3	8.1	17.3	65.3	196.9	306.7	493.2	19.8	7.9	143.4

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000 base boxes of metal) <sup>1</sup>	Value (million dollars)	Quantity (1,000 base boxes of metal) <sup>1</sup>	Value (million dollars)
3411- --	METAL CANS, TOTAL.....	(X)	2,585.9	(X)	2,002.2
	Metal cans: <sup>2</sup>				
	Steel (tinplate) and aluminum:				
34110 10 and 20	As reported in the census of manufactures.....	137,524	2,572.6	111,540	1,988.0
	As reported on Monthly Form M34D.....	133,980	2,536.8	110,949	(NA)
	Steel (tinplate).....	<sup>3</sup> 126,141	2,332.4	<sup>3</sup> 108,593	(NA)
	Aluminum.....	<sup>4</sup> 7,839	204.4	<sup>4</sup> 2,356	(NA)
	Detail data by type of can from monthly survey M34D:				
34110 12	Fruit and fruit juices, including cans for fruit base still drinks sold as soft drinks.....	14,313	(NA)	15,474	(NA)
34110 15	Vegetable and vegetable juice.....	21,952	(NA)	18,306	(NA)
34110 13	Evaporated and condensed milk.....	3,337	(NA)	4,161	(NA)
34110 19	Other dairy products.....	728	(NA)	595	(NA)
34110 31	Meat, including poultry.....	3,803	(NA)	3,654	(NA)
34110 41	Fish and seafood.....	2,920	(NA)	2,875	(NA)
34110 45	Coffee.....	4,162	(NA)	4,748	(NA)
34110 51	Lard and shortening.....	1,986	(NA)	2,034	(NA)
34110 63	Soft drinks.....	14,580	(NA)	4,116	(NA)
34110 67	Beer.....	27,537	(NA)	19,580	(NA)
34110 73	Baby food, including formulas.....	855	(NA)	701	(NA)
34110 79	All other foods, including soups.....	13,227	(NA)	12,182	(NA)
34110 71	Pet foods.....	5,797	(NA)	4,625	(NA)
34110 81	Oil (open top up through 5-quart).....	3,056	(NA)	3,995	(NA)
34110 83	Paint and varnish products, including painters' supplies.....	4,154	(NA)	3,689	(NA)
34110 85	Antifreeze.....	828	(NA)	1,057	(NA)
34110 87	Pressure packing (valve type).....	4,371	(NA)	2,501	(NA)
34110 89	All other nonfoods.....	6,374	(NA)	6,656	(NA)
34110 91	Tinware end products, including ice cream cans but excluding cooking and kitchen utensils.....	(X)	2.2	(X)	9.0
34110 00	Metal cans, n.s.k. (For establishments with 10 or more employees in 1967. See Note.).....	(X)	9.4		
34110 02	Metal cans, n.s.k. (For establishments with fewer than 10 employees in 1967. See Note.).....	(X)	1.7	(X)	5.2

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>A base box is an area of 31,360 square inches, equivalent to 112 sheets, 14" x 20" in size.

<sup>2</sup>A metal can is defined as a single-walled container constructed wholly of tinplate, terneplate, blackplate, waste plate, aluminum sheet or impact extrusions (slugs) designed for packing products. This definition excludes steel pails, defined as single-walled shipping containers having capacities of 1-12 gallons inclusive that are cylindrically constructed of steel sheet of 29 gauge and heavier.

<sup>3</sup>The 1967 and 1963 figures represent, respectively, 5,149 and 4,621 thousand short tons of steel. The 1967 and 1963 estimates are derived, respectively, by use of the factors 24.5 and 23.5 base boxes per short ton of steel.

<sup>4</sup>The 1967 and 1963 figures represent, respectively, 173.8 and 43.3 thousand short tons of aluminum.



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3411.--METAL CANS					
	Materials, parts, containers, and supplies, total.....		(X)	1,726.9	(X)	1,212.5
	Mill shapes and forms (except castings):					
	Carbon steel:					
331018	Tinplate, terneplate and blackplate.....	1,000 short tons.	5,339.2	1,173.9	4,611.4	938.8
331011	Bars and bar shapes.....	...do.....	(NA)	8.1	11.3	2.8
331012	Sheet and strip.....	...do.....				
331017	Wire and wire products.....	...do.....				
331019	All other carbon steel mill shapes and forms.....	...do.....				
331020	Alloy steel (except stainless).....	...do.....	(NA)	2.0	0.3	0.2
331031	Stainless steel mill shapes and forms.....	...do.....				
	Aluminum and aluminum-base alloy: <sup>1</sup>					
335202	Sheet, plate, and foil.....	Million lbs.....	466.3	161.2	115.2	35.4
335209	All other aluminum mill shapes and forms (wire, rod, extruded shapes, etc.).....	...do.....				
285101	Paints, varnishes, lacquers, japans, and enamels.....	1,000 gal.....	21,816.0	55.4	15,657.0	39.4
260091	Paper and paperboard containers, including corrugated boxes.....		(X)	44.0	(X)	33.3
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	263.6	(X)	151.5
976000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> .....		(X)	18.7	(X)	11.2

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Data on the tonnage of tinplate, terneplate, blackplate and aluminum consumed in the production of cans constructed wholly of metal are published in Current Industrial Reports Series M34-D, Metal Cans. The consumption total reported in the Census of Manufactures also includes such metal consumed in the production of secondary products.

<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3411, these small establishments accounted for approximately 0.1 percent of payrolls and 0.1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

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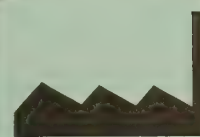
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# 1967 CENSUS OF MANUFACTURES

## INDUSTRY SERIES



MC67(P)-34A-2

## preliminary report

### Cutlery

SIC Code 3421

The Cutlery Industry includes establishments primarily engaged in manufacturing cutlery. Establishments primarily engaged in manufacturing table cutlery made entirely of metal are classified in industry 3914; those manufacturing electric razors in industry 3634; and those manufacturing hair clippers for human use in industry 3999, and for animal use in industry 3522.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Cutlery Industry amounted to \$377.2 million, an increase of 33 percent compared with 1963. Value added by manufacture at \$275.0 million in 1967 was 29 percent more than value

added in 1963. Average employment in the industry showed an increase of 10 percent from 1963 to a total of 13.0 thousand employees in 1967.

Of the \$377 million total value of shipments and other receipts of establishments classified as cutlery, \$53 million were products primary to other industries; and \$8 million were receipts for miscellaneous activities. The industry shipments of primary products represented 85 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 89 percent in 1963.

The total value of cutlery shipped by all producers in 1967 was \$315.9 million of which \$302 million, or 96 percent, were shipped by plants classified in industry 3421, Cutlery, while

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
INDUSTRY 3421.-CUTLERY														
1967 Census . . . .	145	69	13.0	80.1	10.4	20.5	54.5	275.0	104.7	377.2	11.5	63.1	85	96
1966 ASM <sup>1</sup> . . . . .	(NA)	(NA)	13.7	80.0	10.6	21.4	54.4	270.1	107.5	373.6	11.6	63.7	(NA)	(NA)
1965 ASM <sup>1</sup> . . . . .	(NA)	(NA)	14.2	80.0	11.0	22.4	54.1	256.7	97.6	351.3	11.5	56.5	(NA)	(NA)
1964 ASM <sup>1</sup> . . . . .	(NA)	(NA)	11.8	65.5	9.3	19.7	44.4	214.7	81.6	295.1	9.0	50.5	(NA)	(NA)
1963 Census . . . . .	161	67	11.8	64.3	9.5	19.3	43.9	214.0	72.9	283.4	12.4	47.2	89	97
1962 ASM <sup>1</sup> . . . . .	(NA)	(NA)	12.4	65.8	9.5	19.1	40.6	194.6	63.3	257.3	11.4	41.1	(NA)	(NA)
1961 ASM <sup>1</sup> . . . . .	(NA)	(NA)	11.7	60.3	8.6	17.4	37.2	174.7	57.8	232.3	6.5	41.7	(NA)	(NA)
1960 ASM <sup>1</sup> . . . . .	(NA)	(NA)	11.3	55.8	8.6	17.2	35.2	159.5	54.7	209.3	3.4	41.7	(NA)	(NA)
1959 ASM <sup>1</sup> . . . . .	(NA)	(NA)	12.1	56.2	8.9	17.6	35.3	150.2	51.8	201.9	3.3	38.9	(NA)	(NA)
1958 Census <sup>2</sup> . . . .	183	72	11.8	52.7	9.1	18.0	34.9	126.3	51.1	179.3	2.4	38.0	93	98

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 2 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued September 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary  
Rocco C. Siciliano, Under Secretary  
BUREAU OF THE CENSUS



the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 97 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1,

2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
	INDUSTRY 3421.-CUTLERY												
United States, total.....	145	69	13.0	80.1	10.4	20.5	54.5	275.0	104.7	377.2	11.5	11.8	214.0
Northeast.....	79	48	10.6	66.6	8.4	16.7	45.2	240.0	90.6	327.5	10.0	9.1	182.6
New York.....	20	16	1.6	8.6	1.3	2.7	6.7	14.7	10.7	25.5	(D)	2.1	16.7
North Central.....	40	11	1.0	5.6	0.9	1.7	4.2	12.1	6.0	17.7	0.3	1.3	14.2
Ohio.....	12	4	0.6	3.4	0.5	1.1	2.6	7.7	3.1	10.5	0.2	0.9	10.3

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Value of shipments including interplant transfers (million dollars)	
		1967	1963
3421- --	CUTLERY, TOTAL.....	315.9	254.3
34211 --	Cutlery, scissors, shears, trimmers, and snips.....	121.7	90.5
34211 11	Table cutlery (consists of knives, forks, spoons, etc., for the serving and eating of food, with handles of materials other than metal), including carving sets with handles of materials other than metal but excluding blades sold separately.....	17.6	6.0
34211 21	Kitchen cutlery.....	18.3	15.9
34211 41	Pocket knives, and other folding-blade knives.....	18.7	14.2
34211 53	Scissors and shears, including household types, barber shears, pinking and tailoring shears, etc., but excluding manicure, pedicure, surgical, and the types included in "All other scissors and shears".....	17.6	13.8
34211 55	All other scissors and shears, including hedge and grass shears and pruners (except electric) aviation and tinners snips, BX and wire filament cutters, etc.....	22.5	16.4
34211 61	Manicure and pedicure scissors and implements.....	14.8	8.1
34211 98	Other cutlery, including butchers' and meatpacking cutlery.....	10.2	14.6
34211 00	Cutlery, scissors, shears, trimmers and snips, n.s.k.....	2.0	1.3
34212 --	Razor blades and razors, except electric.....	185.9	159.4
34212 11	Safety razors.....	185.9	159.4
	Razor blades.....		
34212 53	Stainless steel.....		
34212 55	Carbon and alloy steel.....		
34210 00	Cutlery, n.s.k. (For companies with 10 or more employees. See Note.).....	6.6	4.4
34210 02	Cutlery, n.s.k. (For companies with less than 10 employees. See Note.).....	1.7	

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind.

<sup>1</sup>Quantities shipped are 20411 and 20140 thousands units for 1967 and 1963 respectively.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3421.--CUTLERY					
	Materials, parts, containers, and supplies, total.....	.....	(X)	98.8	(X)	64.5
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	4.0	0.6	4.3	0.8
331012	Sheet and strip.....	..do.....	13.1	4.0	14.2	5.4
331013	Plates.....	..do.....	-	-	( <sup>1</sup> )	( <sup>1</sup> )
331017	Wire and wire products.....	..do.....			0.3	0.1
331019	All other carbon steel mill shapes and forms.....	..do.....	0.9	0.2	<sup>1</sup> 2.4	<sup>1</sup> 0.5
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	..do.....				
331029	All other alloy steel mill shapes and forms.....	..do.....	1.3	0.5	0.4	0.2
331031	Stainless steel.....	..do.....	5.5	8.6	6.7	6.4
	Copper and copper-base alloy mill shapes and forms:					
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....				
335123	Plate, sheet, and strip (including military cups and discs).	..do.....	1.4	1.2	3.8	1.7
335127	Pipe and tube.....	..do.....			0.3	0.3
	Aluminum and aluminum-base alloy mill shapes and forms:					
335202	Sheet, plate, and foil.....	..do.....	2.2	1.2	2.8	1.2
335209	All other aluminum mill shapes and forms.....	..do.....				
	Castings (rough and semifinished): <sup>2</sup>					
332011	Iron (gray and malleable).....	1,000 short tons.	0.6	0.4	0.7	0.4
332300	Steel.....	..do.....	(Z)	(Z)	0.1	0.2
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	0.1	0.1	(Z)	(Z)
339100	Iron and steel forgings <sup>2</sup> .....	1,000 short tons.	1.5	0.9	0.2	0.3
970099	All other materials and components, parts, containers, and supplies consumed.....	.....	(X)	75.7	(X)	42.8
976000	Materials, parts, containers and supplies, n.s.k. <sup>3</sup> .....	.....	(X)	5.4	(X)	4.2

- Represents zero. n.s.k. Not specified by kind. (X) Not applicable. (Z) Less than 0.1 when rounded.

<sup>1</sup>Material code 331013, carbon steel plates, is combined with material code 331019, all other carbon steel mill shapes and forms.<sup>2</sup>Does not include castings or forgings produced and consumed in the same establishment.<sup>3</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3421, these small establishments accounted for less than 1 percent of payrolls and of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products**--In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture**--This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

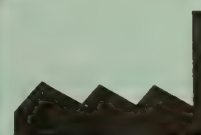
**Expenditures for Plant and Equipment**--For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories**--Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# 1967 CENSUS OF MANUFACTURES



MC67(P)-34A-3

## INDUSTRY SERIES

## preliminary report

### Hand and edge tools, n.e.c. SIC Code 3423

The Hand and Edge Tools, Except Machine Tools and Handsaws, Industry includes establishments primarily engaged in manufacturing files and other hand and edge tools for metalworking, woodworking and general maintenance. Establishments primarily engaged in manufacturing saws are classified in industry 3425, and metal cutting dies, power driven handtools, and attachments and accessories for machine tools in Major Group 35.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classi-

fied in the Hand and Edge Tools, N.E.C., Industry amounted to \$836.3 million, an increase of 48 percent compared with 1963. Value added by manufacture at \$521.9 million in 1967 was 43 percent more than value added in 1963. Average employment in the industry showed an increase of 19 percent from 1963 to a total of 37.6 thousand employees in 1967.

Of the \$836.3 million total value of shipments and other receipts of establishments classified as hand and edge tools, n.e.c., \$131.1 million were products primary to other industries; and \$106.4 million were receipts for miscellaneous activities. The industry shipments of primary products represented 82 percent of the total manufactured

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
INDUSTRY 3423.--HAND AND EDGE TOOLS, N.E.C.														
1967 Census....	669	254	37.6	241.9	30.1	60.8	172.2	521.9	322.2	836.3	23.8	182.5	82	85
1966 ASM <sup>1</sup> .....	(NA)	(NA)	38.0	245.0	30.0	62.8	175.0	511.9	308.5	808.1	19.6	174.6	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	35.3	212.2	27.7	56.1	151.7	455.3	274.5	714.6	16.8	159.7	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	32.7	193.1	25.4	51.5	136.7	390.0	238.2	626.4	13.7	137.6	(NA)	(NA)
1963 Census.....	716	255	31.5	176.8	24.5	48.7	125.7	364.3	207.4	565.6	11.0	132.2	87	84
1962 ASM <sup>1</sup> .....	(NA)	(NA)	33.7	180.0	26.1	53.9	126.0	358.1	234.5	589.2	12.1	144.6	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	32.0	164.9	24.6	49.9	114.6	334.6	205.8	538.5	9.1	128.1	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	31.1	156.0	24.2	48.9	109.5	315.9	185.4	492.6	8.3	121.7	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	31.9	156.7	25.1	50.8	111.1	325.9	193.8	510.0	10.5	112.5	(NA)	(NA)
1958 Census <sup>2</sup> ...	763	250	30.3	142.6	23.6	45.7	99.7	267.3	168.2	440.1	8.6	101.2	91	85

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director

product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 87 percent in 1963.

The total value of hand and edge tools, n.e.c., shipped by all producers in 1967 was \$708.4 million of which \$598.8 million, or 85 percent, were shipped by plants classified in industry 3423, Hand and Edge Tools, N.E.C., while the remainder was shipped by plants classified in

other industries. This percent, called the coverage ratio, was 84 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total	With 20 employees or more (number)	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
	INDUSTRY 2423.--HAND AND EDGE TOOLS, N.E.C.												
United States, total.....	669	254	37.6	241.9	30.1	60.8	172.2	521.9	322.2	836.3	23.8	31.5	364.3
New England.....	105	47	5.6	37.1	4.4	9.1	26.5	73.2	52.0	121.0	4.2	5.6	54.5
Maine.....	8	2	0.1	0.5	0.1	0.2	0.4	0.9	0.2	1.1	(Z)	(D)	(D)
New Hampshire.....	4	2	0.1	0.4	0.1	0.2	0.4	0.8	0.2	1.0	(Z)	(D)	(D)
Massachusetts.....	52	22	2.7	18.4	2.3	4.7	13.8	35.1	28.2	59.7	2.5	3.0	28.0
Connecticut.....	28	16	2.4	16.6	1.8	3.7	11.1	33.8	22.4	55.7	1.6	2.1	22.0
Middle Atlantic.....	142	60	9.7	57.0	8.0	16.2	42.1	116.0	83.5	194.8	5.5	8.5	94.9
New York.....	65	25	4.8	28.1	3.9	7.8	20.4	59.8	47.9	105.1	2.2	4.1	47.4
New Jersey.....	28	13	1.7	9.5	1.4	2.9	7.0	16.7	10.8	27.4	0.7	1.6	18.7
Pennsylvania.....	49	22	3.2	19.4	2.7	5.6	14.8	39.5	24.8	62.4	2.6	2.7	28.8
East North Central...	212	77	11.8	81.7	9.2	18.4	57.9	195.4	100.8	298.6	6.7	10.4	138.8
Ohio.....	68	30	5.1	36.5	4.1	8.3	26.4	83.6	39.0	122.9	2.3	4.4	56.2
Michigan.....	46	13	0.9	6.3	0.6	1.2	3.4	14.9	6.8	21.5	(D)	0.8	11.4
West North Central...	58	28	3.1	20.0	2.6	5.5	15.0	34.6	20.6	54.4	2.4	2.5	25.2
Minnesota.....	15	6	1.2	7.5	1.0	2.0	5.5	12.0	9.0	20.5	1.0	0.9	8.1
South.....	50	20	3.2	19.5	2.6	5.3	13.5	47.6	33.2	80.8	2.0	2.6	29.3
South Atlantic.....	24	12	2.8	17.4	2.2	4.5	12.1	40.5	20.0	60.6	1.9	(D)	(D)
Tennessee.....	4	3	0.1	0.5	0.1	0.2	0.4	1.2	0.7	1.7	(Z)	(D)	(D)
West.....	102	22	4.2	26.6	3.2	6.3	17.1	55.2	32.1	86.7	2.9	1.8	21.7
California.....	81	17	3.7	23.2	2.8	5.5	15.0	47.7	26.2	73.3	1.7	1.4	17.0

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.  
(Z) Less than \$50 thousand.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3423 --	HAND AND EDGE TOOLS, N.E.C., TOTAL.....		(X)	708.4	(X)	536.1
34231 --	Mechanics' hand service tools.....		(X)	372.6	(X)	252.4
34231 11	Pliers.....	Million units..	(NA)	46.1	17.3	23.3
34231 21	Ball peen hammers.....	do.....	<sup>e</sup> 3.2	4.9	1.9	2.8
	Wrenches:					
34231 33	Socket.....	do.....	<sup>e</sup> 78.1	46.4	55.2	32.6
34231 35	Flat (open-end, box-end and combination open-end and box)	do.....	<sup>e</sup> 38.0	31.0	28.6	21.3
34231 37	Adjustable.....	do.....	<sup>e</sup> 19.8	35.7	9.4	18.1
34231 39	All other.....	do.....	8.1	13.4	31.3	20.8
34231 41	Screw drivers.....	do.....	<sup>e</sup> 108.0	38.3	52.8	21.0
34231 51	Automobile jacks, mechanical, excluding hydraulic and pneumatic.	do.....	7.6	24.5	10.4	17.9
34231 98	Other mechanics' hand service tools.....		(X)	107.1	(X)	84.6
34231 00	Mechanics' hand service tools, n.s.k.....		(X)	25.2	(X)	10.0
34232 --	Edge tools, hand operated.....		(X)	122.1	(X)	106.2
34232 11	Agricultural edged handtools, except scissors and shears (scythes, sickles, grass hooks, machetes, hay knives, and similar tools).....		(X)	1.8	(X)	3.1
34232 31	Axes, adzes, and hatchets.....		(X)	6.6	(X)	6.4
34232 51	Cutting dies, for use in cutting cloth, paper, leather, etc., excluding dies for cutting metal.....		(X)	22.5	(X)	20.3
34232 55	Machine knives, except metal cutting.....		(X)	17.5	(X)	13.5
34232 61	Can openers (except electric).....		(X)	6.7	(X)	6.6
34232 71	Auger bits.....	Million units..	(NA)	5.9	4.6	4.6
34232 83	Chisels.....	do.....	<sup>e</sup> 10.4	8.6	7.6	5.8
34232 81	Planes.....					
34232 98	Other edge tools.....		(X)	46.7	(X)	43.5
34232 00	Edge tools, n.s.k.....		(X)	5.8	(X)	2.3
34233 --	Files, rasps, and file accessories and other handtools.....		(X)	190.2	(X)	156.0
34233 11	Shovels, spades, scoops, telegraph spoons, and scrapers.....	Million units..	12.1	27.4	(NA)	22.4
34233 21	Light forged hammers (under 4 pounds), excluding ball peen hammers.....	do.....	5.1	9.7	(NA)	8.8
34233 31	Heavy forged tools, sledges (4 pounds and over), picks, pick mattocks, and mauls.....	do.....	1.9	5.5	(NA)	4.3
34233 41	Steel goods (forks, hoes, rakes, weedeers, etc.).....	do.....	20.3	25.6	(NA)	20.3
34233 61	Metalworking files and rasps, including precision files.....	do.....	( <sup>i</sup> )	( <sup>i</sup> )	62.3	25.1
34233 71	Woodworking files and rasps.....	do.....	1.4	2.1	(NA)	0.9
34233 81	Soldering irons (electric).....	do.....	2.0	9.3	2.0	9.8
34233 98	Other handtools, except edge tools.....		(X)	<sup>1</sup> 105.5	(X)	60.6
34233 00	Files, rasps, and file accessories and other handtools, n.s.k....		(X)	5.1	(X)	3.7
34230 00	Hand and edge tools, except machine tools and handsaws, n.e.c. (Includes establishments with 10 or more employees. See Note.)...		(X)	12.9		
34230 02	Hand edge tools, except machine tools and handsaws, n.e.c. (Includes establishments with fewer than 10 employees. See Note.)		(X)	10.6	(X)	21.4

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

<sup>e</sup>From 10 to 30 percent of this figure was estimated. (NA) Not available. n.e.c. Not elsewhere classified. n.s.k. Not specified by kind.

(X) Not applicable.

<sup>1</sup>Combined with product class 3423398, "Other hand tools, except edge tools," to avoid disclosing figures for individual companies.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3423.--HAND AND EDGE TOOLS, N.E.C.					
	Materials, parts, containers, and supplies, total.....		(X)	231.7	(X)	162.6
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	85.6	19.6	91.7	17.2
331012	Sheet and strip.....	do.....	63.8	14.4	60.1	11.8
331013	Plates.....	do.....	9.7	12.4	1.0	0.2
331017	Wire and wire products.....	do.....			4.8	1.5
331019	All other carbon steel mill shapes and forms.....	do.....			4.7	1.6
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	do.....	45.4	16.2	37.3	10.2
331029	All other alloy steel mill shapes and forms.....	do.....			3.4	2.0
331031	Stainless steel.....	do.....			0.5	0.6
	Copper and copper-base alloy mill shapes and forms:					
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	2.1	1.5	0.9	0.5
335123	Plate, sheet, and strip, including military cups and discs...	do.....	0.4	0.3	0.4	0.3
335127	Pipe and tube.....	do.....	( <sup>2</sup> )	( <sup>2</sup> )	0.8	0.6
	Aluminum and aluminum-base alloy mill shapes and forms:					
335202	Sheet, plate, and foil.....	do.....	4.5	2.7	3.3	1.3
335209	All other aluminum mill shapes and forms.....	do.....			1.2	0.7
	Castings (rough and semifinished): <sup>3</sup>					
332011	Iron (gray and malleable).....	1,000 short tons.	16.8	10.3	15.4	8.8
332300	Steel.....	do.....	5.1	4.5	1.9	1.3
336100	Aluminum and aluminum base alloy.....	Million lbs.....	4.1	3.5	3.2	2.2
339100	Iron and steel forgings <sup>4</sup> .....	1,000 short tons.	(NA)	18.9	8.1	7.3
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	100.5	(X)	68.0
976000	Materials, parts, containers, and supplies, n.s.k. <sup>5</sup> .....		(X)	36.9	(X)	26.3

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>These figures are understated by \$2 million because of apparent undercoverage of carbon steel pipe and tube.<sup>2</sup>Included with material code 970099 "All other materials and components, etc."<sup>3</sup>No data are available for castings produced and consumed in the same establishment.<sup>4</sup>In 1967, 6.2 thousand short tons of iron and steel forgings were produced and consumed in the same establishment. The comparable figure for 1963 is 3.8 thousand short tons.<sup>5</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

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This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3423, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

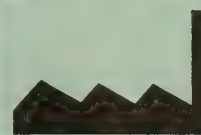
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-34A-4

INDUSTRY SERIES

## Handsaws and saw blades

SIC Code 3425

**preliminary  
report**

The Handsaws and Saw Blades Industry includes establishments primarily engaged in manufacturing handsaws and saw blades for hand and power-driven saws. Establishments primarily engaged in manufacturing power-driven sawing machines are classified in major group 35.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Handsaws and Saw Blades Industry amounted to \$150.4 million, an increase of 46

percent compared with 1963. Value added by manufacture at \$94.9 million in 1967 was 45 percent more than value added in 1963. Average employment in the industry showed an increase of 20 percent from 1963 to a total of 6.1 thousand employees in 1967.

Of the \$150.4 million total value of shipments and other receipts of establishments classified as handsaws and saw blades, \$31.8 million were products primary to other industries; and \$12.1 million were receipts for miscellaneous activities. The industry shipments of primary products represented 77 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 78 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3425.--HANDSAWS AND SAW BLADES														
1967 Census....	84	48	6.1	42.4	4.7	9.8	28.8	94.9	56.6	150.4	3.8	34.3	77	82
1967 ASM <sup>1</sup> .....	(NA)	(NA)	6.2	40.9	4.8	10.4	28.6	99.5	52.4	149.9	2.8	30.2	(NA)	(NA)
1966 ASM <sup>1</sup> .....	(NA)	(NA)	5.7	36.5	4.5	9.4	25.1	81.7	44.8	125.3	2.3	27.0	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	5.0	31.3	3.7	7.7	20.2	68.1	39.6	106.4	2.7	25.0	(NA)	(NA)
1964 ASM <sup>1</sup> .....	76	42	5.1	29.1	3.8	7.7	19.6	65.6	38.6	102.8	6.3	24.4	78	85
1963 Census....	(NA)	(NA)	5.3	29.1	4.0	8.0	18.9	64.9	37.6	102.7	2.2	22.0	(NA)	(NA)
1962 ASM <sup>1</sup> .....	(NA)	(NA)	5.5	29.7	4.1	8.1	19.1	67.5	38.3	102.3	1.8	23.0	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	5.5	29.7	4.0	8.4	19.5	65.2	34.8	100.1	2.3	23.1	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	5.7	30.9	4.3	8.6	21.4	67.5	38.5	105.2	1.6	22.0	(NA)	(NA)
1959 ASM <sup>1</sup> .....	89	38	5.5	28.3	4.1	7.9	18.5	53.7	32.8	87.6	1.2	20.6	82	90
1958 Census <sup>2</sup> ...														

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 3 and 2, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director

The total value of handsaws and saw blades shipped by all producers in 1967 was \$130.2 million of which \$106.5 million, or 82 percent, were shipped by plants classified in industry 3425, Handsaws and Saw Blades, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 85 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
	INDUSTRY 3425. --HANDSAWS AND SAW BLADES												
United States, total.....	84	48	6.1	42.4	4.7	9.8	28.8	94.9	56.6	150.4	3.8	5.1	65.6
Northeast.....	30	20	3.1	22.7	2.3	4.9	15.3	48.0	29.2	76.4	1.9	2.7	37.8
New York.....	11	6	0.6	3.8	0.4	0.8	2.2	4.7	4.6	9.2	(D)	0.4	4.5
North Central.....	29	16	1.3	9.1	1.1	2.2	6.3	21.7	10.8	32.6	0.8	0.9	12.2
Ohio.....	11	4	0.3	1.8	0.2	0.5	1.3	2.9	1.5	4.5	0.1	0.3	3.1

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3425- --	HANDSAWS AND SAW BLADES, TOTAL.....		(X)	130.2	(X)	85.0
	Powersaw blades:					
	Woodworking:					
	Circular:					
34250 11	Solid tooth <sup>1</sup> .....		(X)	17.1	(X)	10.1
34250 13	Inserted tooth.....		(X)	3.1	(X)	3.1
	Band:					
34250 15	Under 2 inches.....	Million ft....	( <sup>2</sup> )	( <sup>2</sup> )	13.9	3.4
34250 17	2 inches and over.....	do.....	0.7	4.2	0.7	3.6
34250 18	Teeth for inserted teeth saws, sold separately.....		(X)	4.3	(X)	2.7
34250 19	All other woodworking powersaw blades (scroll, jigs, etc.).....	Million ft....	(NA)	<sup>2</sup> 17.2	(X)	
	Metalworking:					
34250 31	Circular.....	Millions.....	(NA)	7.3	(NA)	4.3
34250 35	Hack (power only).....	Million units..	3.2	6.3	4.8	6.9
34250 36	Band (flexible back, spring temper metal-cutting and high-speed metal-cutting).....	Million ft....	111.4	26.5	119.7	22.8
34250 39	Other metalworking saw blades (saber, reciprocating, etc.)....		(X)	2.2	(X)	1.4
	Hand-operated saws:					
34250 43	Hacksaw blades (hand only).....	Million units..	52.1	10.4	59.1	12.1
34250 45	Carpenter crosscuts and rip-saws.....	do.....	2.0	5.7	0.7	1.5
34250 49	Other handsaws (heavy handsaws, including crosscut and buck, miter, coping, pruning, compass, etc., including handsaw frames, and handsaw blades sold together or handsaw blades sold separately).....		(X)	18.1	(X)	7.1
34250 00	Handsaws, saw blades and accessories, n.s.k. (For establishments with 10 or more employees. See Note.).....		(X)	6.9	(X)	5.9
34250 02	Handsaws, saw blades and accessories, n.s.k. (For establishments with fewer than 10 or more employees. See Note.).....		(X)	0.9		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Includes all types and sizes of solid tooth circular saw blades for industrial and home workshop type circular saws as well as saw blades for portable power saws and for sawing attachments for portable handtools.

<sup>2</sup>Included with product code 3425019 "All other woodworking powersaw blades" to avoid disclosing operations of individual companies.



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

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			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
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	Materials, parts, containers, and supplies, total.....		(X)	45.4	(X)	32.7
	Mill shapes and forms (except castings):					
	Carbon steel:					
331012	Sheet and strip.....	1,000 short tons.	6.7	6.4	8.0	5.2
331013	Plates.....	do.....	1.2	0.6	0.8	0.2
331011	Bars and bar shapes.....	do.....	4.7	1.6	3.6	1.4
331017	Wire and wire products.....	do.....				
331019	All other carbon steel mill shapes and forms.....	do.....				
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	do.....	14.3	20.0	10.4	12.8
331029	All other alloy steel mill shapes and forms.....	do.....				
331031	Stainless steel.....	do.....			(Z)	(Z)
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	13.1	(X)	12.1
973000	Materials, parts, containers, and supplies, n.s.k.....		(X)	3.7	(X)	1.9

n.s.k. Not specified by kind. (X) Not applicable. (Z) Less than 0.1 when rounded.

\*This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

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This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3425, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

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The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**U.S. DEPARTMENT OF COMMERCE**

**BUREAU OF THE CENSUS**

**WASHINGTON, D.C. 20233**

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**OFFICIAL BUSINESS**

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

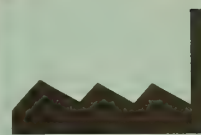
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-34A-5

## INDUSTRY SERIES

**preliminary  
report**

### Hardware, n.e.c.

SIC Code 3429

The Hardware, Not Elsewhere Classified, Industry includes establishments primarily engaged in manufacturing miscellaneous metal products usually termed "hardware," not elsewhere classified. Establishments primarily engaged in manufacturing bolts and nuts are classified in industry 3452, nails and spikes in Major Group 33, cutlery in industry 3421, handtools in industry 3423, and pole line and transmission hardware in major group 36.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Hardware, N.E.C., Industry amounted

to \$2,358.4 million, an increase of 32 percent compared with 1963. Value added by manufacture at \$1,427.7 million in 1967 was 34 percent more than value added in 1963. Average employment in the industry showed an increase of 14 percent from 1963 to a total of 100,3 thousand employees in 1967.

Of the \$2,358.4 million total value of shipments and other receipts of establishments classified as hardware, n.e.c., \$208.0 million were products primary to other industries; and \$88.3 million were receipts for miscellaneous activities. The industry shipments of primary products represented 91 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was also 91 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)
INDUSTRY 3429.--HARDWARE, N.E.C.														
1967 Census....	1,043	486	100.3	682.1	79.7	160.2	490.0	1,427.7	951.2	2,358.4	82.2	386.9	91	95
1966 ASM <sup>1</sup> .....	(NA)	(NA)	102.7	675.3	81.9	166.6	485.6	1,398.2	960.0	2,343.8	87.6	365.7	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	98.0	635.2	78.5	162.3	463.7	1,294.8	927.8	2,209.1	98.8	333.9	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	92.5	579.6	73.8	149.5	422.1	1,149.8	811.3	1,937.9	86.4	319.7	(NA)	(NA)
1963 Census....	1,069	446	88.1	529.2	70.2	145.6	383.4	1,063.7	730.5	1,785.1	71.0	277.5	91	93
1962 ASM <sup>1</sup> .....	(NA)	(NA)	89.9	500.6	69.2	142.0	355.2	966.6	693.6	1,651.8	36.6	265.7	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	87.2	465.2	65.8	133.1	320.7	838.3	636.9	1,467.4	39.2	259.0	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	92.2	497.1	71.4	145.0	344.1	886.1	668.8	1,552.4	37.8	252.2	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	89.3	472.0	69.6	145.7	329.5	872.9	647.7	1,500.8	26.9	258.8	(NA)	(NA)
1958 Census <sup>2</sup> ....	1,059	454	88.1	433.3	68.1	134.2	301.5	754.9	590.7	1,347.9	25.6	229.5	89	93

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director



The total value of hardware, n.e.c., shipped by all producers in 1967 was \$2,171.2 million of which \$2,062.1 million, or 95 percent, were shipped by plants classified in industry 3429, Hardware, N.E.C., while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 93 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3429.--HARDWARE, N.E.C.												
United States, total.....	1,043	486	100.3	682.1	79.7	160.2	490.0	1,427.7	951.2	2,358.4	82.2	88.1	1,063.7
New England.....	105	53	14.2	83.6	10.9	20.7	55.7	155.6	90.8	245.2	12.5	13.2	119.2
Connecticut.....	57	31	10.3	64.0	8.0	15.3	43.3	121.6	66.5	186.7	10.8	9.5	94.9
Middle Atlantic.....	240	94	15.2	104.6	12.0	24.0	74.4	214.6	132.1	343.3	8.5	14.0	172.1
New York.....	131	46	6.8	46.3	5.2	10.7	31.3	84.5	64.5	148.1	5.4	5.9	60.9
East North Central....	345	189	49.8	369.4	40.3	82.5	277.7	809.5	554.5	1,350.9	45.8	42.9	584.1
Ohio.....	63	40	12.4	100.6	9.7	19.9	75.9	245.9	175.5	421.1	12.0	8.5	133.1
Indiana.....	38	21	2.7	16.2	2.1	4.3	11.4	37.7	32.3	69.2	1.7	2.8	33.0
Michigan.....	111	58	17.9	143.8	15.0	31.4	112.1	315.8	212.8	521.7	20.4	17.6	266.3
West North Central....	47	21	2.5	14.8	2.1	4.1	10.4	29.9	25.5	55.2	1.1	1.9	19.4
Iowa.....	5	3	0.5	2.9	0.4	0.7	2.0	6.7	7.1	13.6	0.1	0.5	4.2
Missouri.....	16	9	1.1	7.4	1.0	1.9	4.9	13.2	7.9	20.6	0.6	0.9	8.9
South.....	110	56	9.4	46.5	7.6	15.1	31.8	94.9	71.8	165.8	7.5	7.5	66.4
South Atlantic.....	49	26	3.5	17.4	2.9	5.7	11.9	38.3	24.3	63.2	3.2	2.7	24.2
Virginia.....	5	4	0.4	2.1	0.4	0.8	1.2	1.3	1.3	3.3	(D)	(D)	(D)
North Carolina....	13	8	1.3	7.0	1.1	2.1	4.8	19.9	11.2	31.2	0.6	0.8	5.5
Tennessee.....	14	10	3.6	17.3	2.9	5.7	12.1	33.2	21.8	54.0	2.4	(D)	(D)
West.....	196	73	9.1	63.2	6.7	13.8	40.1	123.4	76.5	198.0	6.8	8.7	102.5
California.....	164	64	8.2	57.7	6.0	12.5	36.1	111.9	68.2	178.2	(D)	8.1	96.2

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Value of Shipments by All Producers: 1967 and 1963

(Includes value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Value of shipments including interplant transfers (million dollars)	
		1967	1963
3429- --	HARDWARE, N.E.C., TOTAL.....	2,171.2	1,663.1
34291 --	Transportation equipment hardware.....	981.7	778.5
34291 11	Marine hardware, including shackles, rope sockets, tackle blocks, wire rope, clips, clamps, and joiners' hardware.....	80.0	34.9
34291 31	Aircraft hardware.....	48.4	35.8
34291 53	Motor vehicle hardware, including lock units, door and window handles, window regulators, hinges, license plate brackets, instrument panel knobs, etc. <sup>1</sup> .....	807.7	682.4
34291 98	Other transportation equipment hardware, including railroad car hardware.....	30.3	22.2
34291 00	Transportation equipment hardware, n.s.k.....	15.3	3.2
34292 --	Furniture hardware.....	123.6	95.3
34292 13	Rotating and tilting fixtures and bases.....	25.2	61.9
34292 15	Furniture hardware including drawer pulls, slides, handles, etc. (excluding casters).....	60.1	
34292 53	Furniture casters.....	30.8	23.6
34292 55	Other floor protective devices, including slides, glides, furniture rests, and desk leg cups....	5.0	5.7
34292 00	Furniture hardware, n.s.k.....	2.5	4.1
34293 --	Vacuum and insulated bottles, jugs, and chests.....	55.4	48.0
34293 15	Vacuum (air evacuated) bottles, pitchers, servers, etc.....	55.4	33.2
34293 17	Insulated (portable and other than air evacuated) picnic jugs, picnic chests, coolers, etc. (except those made principally of plastics).....		14.8
34294 --	Builders' hardware.....	589.9	465.8
34294 11	Padlocks.....	39.7	22.7
34294 21	Doorlocks, locksets, and lock trim:	89.3	107.2
34294 22	Cylindrical type.....		
34294 24	Bored types.....		
34294 25	All other types.....	9.8	
34294 27	Night latches and deadlocks.....	7.3	9.3
34294 28	Emergency exit devices (antipanic devices).....	13.6	10.0
34294 33	Screen and storm door hardware, including pneumatic closers.....	14.2	(2)
34294 35	Miscellaneous sash, screen, and shelf hardware (window hardware, transom hardware, door pulls, and bolts etc.).....	53.4	50.4
34294 41	Door closers and checking devices, including floor types (excluding screen and storm door closures).....	43.1	41.1
34294 51	Hinges and butts, excluding cabinet hinges, including spring hinges.....	49.7	40.9
34294 63	Cabinet hardware, including cabinet hinges but excluding cabinet locks.....	42.9	57.1
34294 65	Miscellaneous locking devices, including cabinet locks.....	10.4	(2)
34294 71	Hangers, tracks, and related items, including overhead door hardware (except sliding and folding door hardware, residential and commercial).....	54.5	37.5
34294 73	Sliding and folding door hardware (residential and commercial).....	19.6	12.8
34294 98	Other builders' hardware.....	92.7	68.1
34294 00	Builders' hardware, n.s.k.....	19.7	8.6
34295 --	Other hardware.....	329.5	237.4
34295 12	Casket and casket shell hardware.....	14.0	13.6
34295 22	Casters and wheels, for dollies and industrial handtrucks.....	56.9	41.8
34295 32	Trunk and luggage hardware, including locks.....	20.7	15.0
34295 52	Fireplace fixtures and equipment, including andirons, screens, tongs and other fire tools.....	16.7	16.4
34295 62	Hose fittings and couplings.....	97.9	63.1
34295 65	Refrigerator and stove hardware.....	17.0	21.6
34295 98	Other hardware, including saddlery and harness hardware, but excluding drapery hardware.....	87.5	61.5
34295 00	Other hardware, n.s.k.....	18.8	4.4
34290 00	Hardware, n.e.c., n.s.k. (For companies with 10 or more employees. See Note.).....	74.8	38.1
34290 02	Hardware, n.e.c., n.s.k. (For companies with less than 10 employees. See Note.).....	16.3	

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.e.c. Not elsewhere classified. n.s.k. Not specified by kind.

<sup>1</sup>Includes only the value of motor vehicle hardware reported as such. It is likely that an indeterminate amount of motor vehicle hardware was reported as motor vehicle parts and classified accordingly in the Motor Vehicle and Parts Industry.

<sup>2</sup>For 1963, product codes 34294 33 and 34294 65 were included with product codes 34294 98.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3429.--HARDWARE, N.E.C.					
	Materials, parts, containers, and supplies, total.....		(X)	852.1	(X)	654.0
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	103.1	19.1	89.4	16.4
331012	Sheet and strip.....	do.....	741.9	123.7	635.2	111.3
331013	Plates.....	do.....	( <sup>1</sup> )	( <sup>1</sup> )	3.9	0.6
331017	Wire and wire products.....	do.....	101.0	20.8	91.3	19.7
331019	All other carbon steel mill shapes and forms.....	do.....	<sup>2</sup> 48.4	<sup>2</sup> 12.5	14.7	4.9
331020	Alloy steel (except stainless).....	do.....	7.6	2.9	3.6	1.6
331031	Stainless steel.....	do.....	43.1	42.7	37.9	37.3
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction only).....	Million lbs.....	2.4	1.8	( <sup>3</sup> )	( <sup>3</sup> )
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	do.....	20.2	10.8	22.8	10.7
335123	Plate, sheet, and strip, including military cups and discs...	do.....	25.7	16.5	30.8	17.6
335127	Pipe and tube.....	do.....	( <sup>4</sup> )	( <sup>4</sup> )	2.0	1.6
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate and foil.....	do.....	29.4	13.0	25.1	11.3
335205	Extruded shapes.....	do.....	18.2	8.7	16.3	7.8
335209	All other aluminum mill shapes and forms.....	do.....	2.7	1.4	8.4	4.4
	Primary metals:					
333122	Copper and copper-base alloy refinery shapes.....	1,000 short tons.	9.9	8.8	7.4	4.8
333348	Zinc and zinc-base alloy refinery shapes.....	do.....	127.2	39.5	119.7	33.8
333401	Aluminum and aluminum-base alloy refinery shapes.....	do.....	3.9	1.9	4.4	2.4
339915	Metal powders.....	Million lbs.....	( <sup>3</sup> )	( <sup>3</sup> )	(NA)	(NA)
	Castings (rough and semifinished): <sup>5</sup>					
332011	Iron (gray and malleable).....	1,000 short tons.	55.1	24.6	58.9	20.4
332300	Steel.....	do.....	8.3	5.1	4.2	2.3
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	6.8	4.9	5.3	3.4
336200	Copper and copper-base alloy.....	do.....	11.6	10.1	(NA)	5.6
970099	All other materials and components, parts, containers, and supplies consumed.....	do.....	(X)	373.0	(X)	291.8
976000	Materials, parts, containers, and supplies, n.s.k. <sup>6</sup> .....	do.....	(X)	110.3	(X)	44.1

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Included with material code 331019 "All other carbon steel mill shapes and forms."<sup>2</sup>These figures are understated by \$5 million or less because of apparent undercoverage.<sup>3</sup>Included with material code 970099 "All other materials, etc." to avoid disclosing operations of individual companies.<sup>4</sup>Included with material code 970099 "All other materials, etc."<sup>5</sup>In addition there were 3.5 and 2.7 thousand short tons of iron castings produced and consumed in the same establishment for 1967 and 1963 respectively. In 1963 2.2 million pounds of aluminum castings were produced and consumed. Data on aluminum, steel and copper castings produced and consumed for 1967 are not available. Also, no data are available for quantities of steel and copper castings produced and consumed in the same establishment in 1963.<sup>6</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3429, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

**U.S. DEPARTMENT OF COMMERCE  
BUREAU OF THE CENSUS  
WASHINGTON, D.C. 20233**

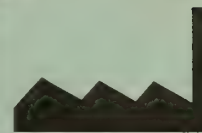
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**OFFICIAL BUSINESS**

**POSTAGE AND FEES PAID  
U.S. DEPARTMENT OF COMMERCE**



# 1967 CENSUS OF MANUFACTURES



MC67(P)-34B-1

## INDUSTRY SERIES

**preliminary  
report**

### Metal sanitary ware

SIC Code 3431

The Enameled Iron and Metal Sanitary Ware Industry includes establishments primarily engaged in manufacturing enameled iron, cast iron, or pressed metal sanitary ware. Establishments primarily engaged in manufacturing vitreous and semivitreous pottery sanitary ware are classified in industry 3261; and those manufacturing porcelain enameled kitchen, household, and hospital ware in industry 3461.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Metal Sanitary Ware Industry amounted

to \$257.2 million, an increase of 9 percent compared with 1963. Value added by manufacture at \$143.8 million in 1967 was 3 percent more than value added in 1963. Average employment in the industry showed a decrease of 5 percent from 1963 to a total of 10.4 thousand employees in 1967.

Of the \$257.2 million total value of shipments and other receipts of establishments classified as metal plumbing fixtures, \$45 million were products primary to other industries; and \$27 million were receipts for miscellaneous activities. The industry shipments of primary products represented 80 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 84 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3431.--METAL SANITARY WARE														
1967 Census....	93	53	10.4	73.2	8.4	17.0	55.2	143.8	112.1	257.2	7.9	47.5	80	90
1966 ASM <sup>1</sup> .....	(NA)	(NA)	12.0	78.7	9.6	18.8	57.6	146.4	119.5	262.3	6.5	50.5	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	11.4	72.7	9.1	17.9	52.8	142.6	111.5	253.8	5.6	43.3	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	11.6	74.6	9.1	18.4	55.0	142.4	111.2	251.9	5.3	40.6	(NA)	(NA)
1963 Census....	81	45	11.0	68.2	8.8	17.5	50.4	139.9	96.2	234.9	5.9	37.4	84	91
1962 ASM <sup>1</sup> .....	(NA)	(NA)	9.5	57.6	7.6	15.7	42.4	111.8	95.1	209.5	*5.4	36.0	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	8.6	48.7	7.0	13.9	37.2	87.5	78.8	178.5	*5.0	33.9	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	*9.8	*54.7	*7.9	*16.1	*41.6	*110.7	*91.1	*196.6	*5.0	*45.5	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	*11.8	*68.7	*9.3	*19.8	*51.7	*133.6	*107.8	*234.9	*7.7	*47.5	(NA)	(NA)
1958 Census <sup>2</sup> ...	63	41	12.4	67.8	10.1	19.2	50.8	118.6	95.2	214.9	8.9	39.0	84	92

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 2 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director

The total value of metal plumbing fixtures shipped by all producers in 1967 was \$205.1 million of which \$185 million, or 90 percent, were shipped by plants classified in industry 3431, Metal Sanitary Ware, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 91 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3431, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MQ-34E, Plumbing Fixtures

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3431.--METAL SANITARY WARE												
United States, total.....	93	53	10.4	73.2	8.4	17.0	55.2	143.8	112.1	257.2	7.9	11.0	139.9
Northeast.....	29	12	1.4	9.7	1.1	2.2	7.3	16.8	13.5	32.0	0.6	1.9	21.0
Pennsylvania.....	14	5	0.6	4.3	0.5	1.0	3.4	5.4	6.1	12.6	(D)	1.3	13.7
North Central.....	28	19	5.4	39.1	4.5	9.1	29.4	78.3	56.3	133.3	5.7	5.2	65.9
Ohio.....	5	4	1.4	9.1	1.2	2.1	7.3	20.0	13.1	34.0	(D)	1.8	26.3
Indiana.....	6	4	0.4	2.8	0.3	0.7	2.1	5.2	7.0	12.2	0.3	0.2	1.9
Illinois.....	11	7	1.1	7.9	0.9	1.7	5.3	19.8	12.9	31.8	0.6	0.7	10.4
South.....	19	11	2.7	19.1	2.2	4.5	14.7	38.0	31.2	69.8	1.1	2.8	41.5
West.....	17	11	0.8	5.4	0.7	1.2	3.8	10.6	11.0	22.1	0.4	1.0	11.4

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3431- --	METAL PLUMBING FIXTURES, TOTAL.....		(X)	205.1	(X)	203.5
	Enamel iron and metal plumbing fixtures:					
34310 10	As reported in the census of manufactures <sup>1</sup> .....		(X)	197.8	(X)	195.5
	As reported on quarterly Form M34E <sup>2</sup> .....		(X)	180.8	(X)	202.3
	Drinking fountains:					
34310 12	Cast iron.....	1,000 units..	43.7	1.5	41.3	(NA)
34310 13, 14	Steel and aluminum and other metals.....	..do.....				
	Lavatories:					
34310 17	Cast iron.....	..do.....	1,876.1	22.1	1,859.9	(NA)
34310 18, 19	Steel, aluminum, and other metals.....	..do.....	803.5	4.7	623.9	(NA)
34310 36, 39	Urinals (cast iron, aluminum and other metals).....	..do.....	8.7	0.3	12.0	(NA)
	Kitchen sinks:					
	Steel:					
34310 42	Porcelain enameled.....	..do.....	1,184.1	12.3	1,796.9	(NA)
34310 46	Stainless.....	..do.....	1,024.5	20.4	921.7	(NA)
34310 41, 48	Cast iron, aluminum, and other metals, vitreous china,.....	..do.....	607.8	11.2	734.8	(NA)
32610 45, 46	and glazed earthenware.....					
34310 52, 53, 55	Wash sinks (cast iron, steel, concrete, and other nonmetals....	..do.....	82.0	4.7	20.0	(NA)
	Service sinks:					
34310 56, 59	Cast iron and steel.....	..do.....	123.9	5.5	117.6	(NA)
32610 56, 57	Vitreous china and glazed earthenware.....	..do.....				(NA)
	Sink and laundry tray combinations:					
34310 61	Cast iron.....	..do.....	28.4	0.8	40.9	(NA)
34310 63	Steel.....	..do.....			9.8	(NA)
34310 66, 67, 68	Laundry trays (vitreous china, cast iron, and glazed earthenware).....	..do.....	33.8	0.9	52.8	(NA)
	Bathtubs:					
34310 71	Cast iron.....	..do.....	1,335.4	70.1	1,560.1	(NA)
32610 72	Steel and glazed earthenware.....	..do.....	757.8	20.0	1,010.2	(NA)
34310 75, 76, 77	Shower receptors, sold separately (steel, other metals, concrete, and composition).....	..do.....	(X)	0.5	14.5	(NA)
	Showerstalls, including receptors:					
34310 81, 83, 85	Steel.....	..do.....	199.1	9.6	176.8	(NA)
	Aluminum, Monel, and other metal, concrete, and composition..	..do.....				
34310 98	Other enameled iron and metal plumbing fixtures.....		(X)	7.3	(X)	8.0

(NA) Not available. (X) Not applicable.

<sup>1</sup>Differs from value of shipments of metal plumbing fixtures reported in the Census Quarterly Survey due to different methods of reporting values in the two surveys.<sup>2</sup>This figure represents value of metal plumbing fixtures only. The detailed values do not add to this total because certain metal plumbing fixtures made of other materials such as vitreous china, concrete, etc.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3431.—METAL SANITARY WARE					
	Materials, parts, containers, and supplies, total.....		(X)	80.2	(X)	77.5
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	39.9	7.2	0.9 55.7 2.2	0.2 8.7 0.4
331012	Sheet and strip.....	..do.....				
331013	Plates.....	..do.....				
331019	All other carbon steel mill shapes and forms.....	..do.....				
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	..do.....	7.0	6.5	1.1 —	0.1 —
331029	All other alloy steel mill shapes and forms.....	..do.....				
331031	Stainless steel mill shapes and forms.....	..do.....			4.8	6.5
	Copper and copper base alloy:					
335790	Insulated wire and cable.....	Million lbs. copper content..	—	—	( <sup>1</sup> )	( <sup>1</sup> )
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	(2)	(2)	2.9	1.4
335123	Plate, sheet, and strip, including military cups and discs...	..do.....				
335127	Pipe and tube.....	..do.....				
	Aluminum and aluminum-base alloy:					
335205	Extruded shapes, rod, pipe, etc.....	..do.....	(2)	(2)	(1)	(1)
335209	All other aluminum mill shapes and forms (wire, rolled rod, sheet, plate, foil, etc.).....	..do.....	(2)	(2)	(1)	(1)
	Primary metals:					
331051	Pig iron.....	1,000 short tons.	45.0	2.7	75.8	4.8
333401	Aluminum and aluminum-base alloy refinery shapes, (ingot, slugs, etc.).....	..do.....	(2)	(2)	(1)	(1)
333122	Copper and copper-base alloy refinery shapes.....	..do.....	(1)	(1)	(1)	(1)
	Scrap (excluding home scrap):					
999811	Iron and steel.....	..do.....	185.4	6.6	217.4	7.7
	Castings (rough and semifinished):					
332011	Iron (gray and malleable) <sup>3</sup> .....	..do.....	(2)	(2)	5.1	1.7
332300	Steel.....	..do.....	(2)	(2)	(1)	(1)
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	(2)	(2)	(1)	(1)
336200	Copper and copper-base alloy.....	..do.....	(2)	(2)	(1)	(1)
339100	Iron and steel forgings <sup>3</sup> .....	1,000 short tons.	—	—	(1)	(1)
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	38.6	(X)	42.4
976000	Materials, n.s.k. <sup>4</sup> .....		(X)	18.6	(X)	3.6

n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Included with material code 970099, "All other materials and components...." to avoid disclosing figures for individual companies.<sup>2</sup>Included with material code 970099 "All other materials and components, etc. These individual items were less than \$2.5 million.<sup>3</sup>Data are not available for castings or forgings produced and consumed in the same establishment except for iron castings which totaled 182.0 thousand short tons in 1967 and 187.5 thousand short tons in 1963.<sup>4</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

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In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3431, these small establishments accounted for less than 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

**U.S. DEPARTMENT OF COMMERCE  
BUREAU OF THE CENSUS  
WASHINGTON, D.C. 20233**

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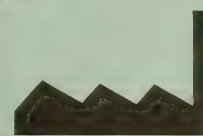
**OFFICIAL BUSINESS**

**POSTAGE AND FEES PAID  
U.S. DEPARTMENT OF COMMERCE**





# 1967 CENSUS OF MANUFACTURES



MC67(P)-34B-2

## INDUSTRY SERIES

### Plumbing fittings and brass goods

SIC Code 3432

**preliminary  
report**

The Plumbing Fixture Fittings and Trim (Brass Goods) Industry includes establishments primarily engaged in manufacturing plumbing fixture fittings and trim (brass goods). Establishments primarily engaged in the manufacture of steam or water line valves are classified in industry 3494.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Plumbing Fittings and Brass Goods Industry amounted to \$410.9 million, an increase of 23 percent compared with 1963. Value added

by manufacture at \$186.8 million in 1967 was 21 percent more than value added in 1963. Average employment in the industry showed a decrease of 3 percent from 1963 to a total of 14.7 thousand employees in 1967.

Of the \$410.9 million total value of shipments and other receipts of establishments classified as plumbing fittings and brass goods, \$20.7 million were products primary to other industries; and \$29.3 million were receipts for miscellaneous activities. The industry shipments of primary products represented 94 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 90 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total	With 20 employees or more (number)	Number	Payroll (million dollars)	Number	Man-hours (millions)	Wages (million dollars)							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)							
INDUSTRY 3432.--PLUMBING FITTINGS AND BRASS GOODS														
1967 Census....	215	91	14.7	94.0	11.6	23.1	65.3	186.8	220.3	410.9	8.2	90.5	94	88
1966 ASM <sup>1</sup> .....	(NA)	(NA)	15.0	84.8	11.9	22.4	60.0	183.0	223.8	396.3	7.0	92.1	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	15.7	87.7	12.5	24.6	61.8	166.0	220.4	383.0	9.1	78.8	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	15.3	84.6	12.5	24.6	61.7	189.3	197.1	377.9	7.2	75.9	(NA)	(NA)
1963 Census....	250	102	15.1	79.3	12.3	24.0	58.3	154.8	181.3	333.8	6.5	64.7	90	83
1962 ASM <sup>1</sup> .....	(NA)	(NA)	14.0	73.1	11.2	21.4	52.9	136.9	167.9	306.0	4.9	55.3	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	13.1	67.6	10.4	20.4	48.4	128.9	145.2	271.9	4.8	48.4	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	14.8	74.4	12.0	23.1	54.6	135.8	146.9	283.1	3.5	48.2	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	15.8	77.2	13.2	25.6	58.2	158.1	155.8	310.9	4.3	50.2	(NA)	(NA)
1958 Census <sup>2</sup> ...	254	84	14.7	66.9	12.1	23.0	50.4	120.6	131.5	250.3	3.6	44.8	91	83

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 6 and 5, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

**BUREAU OF THE CENSUS** George Hay Brown, Director

The total value of plumbing fittings and brass goods shipped by all producers in 1967 was \$408.5 million of which \$360.9 million, or 88 percent, were shipped by plants classified in industry 3432, Plumbing Fittings and Brass Goods, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 83 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
		INDUSTRY 3432.--PLUMBING FITTINGS AND BRASS GOODS											
United States, total.....	215	91	14.7	94.0	11.6	23.1	65.3	186.8	220.3	410.9	8.2	15.1	154.8
Northeast.....	58	24	2.9	17.9	2.2	4.5	11.8	36.1	34.2	70.7	2.5	2.4	23.2
Connecticut.....	9	5	0.7	4.4	0.6	1.2	3.2	8.9	8.2	17.0	(D)	0.5	4.0
New York.....	28	11	0.7	3.9	0.6	1.1	2.4	7.2	10.1	17.6	0.2	(D)	(D)
North Central.....	80	37	6.5	44.3	5.0	9.9	30.1	87.5	109.3	196.4	3.6	7.2	76.5
Ohio.....	22	7	1.5	8.8	1.2	2.2	6.4	16.2	21.2	37.6	(D)	3.0	30.8
Indiana.....	6	5	1.3	8.4	1.0	2.1	6.1	25.9	21.6	47.0	0.7	0.7	11.7
Illinois.....	19	8	1.4	11.0	1.1	2.3	7.6	16.8	26.9	42.9	0.6	1.0	8.8
Iowa.....	5	4	0.5	3.4	0.4	0.7	2.3	6.9	7.5	14.0	0.3	(D)	(D)
South.....	31	15	3.5	19.6	2.8	5.6	14.5	40.8	50.4	95.1	1.5	3.3	31.3
West.....	46	15	1.9	12.2	1.6	3.2	8.9	22.5	26.4	48.6	0.5	2.2	23.8

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3432- --	PLUMBING FITTINGS AND BRASS GOODS, TOTAL.....		(X)	408.5	(X)	329.6
34320 01	Bath and shower fittings: Single control bath and shower fittings.....	1,000 units....	0.9	14.0	0.6	7.5
34320 03	Other than single control fittings: Bathtub fillers.....	..do.....	0.4	3.1	1.4	5.0
34320 05	Bathtub and shower combinations.....	..do.....	2.1	19.6	2.0	16.4
34320 07	Shower fittings (with shower heads).....	..do.....	0.6	5.1	1.0	6.4
34320 18	Bath drains and overflows.....	..do.....	3.1	17.8	3.2	12.1
34320 19	Other bath and shower fittings, including single bath faucets, shower heads and popup drains sold separately, etc.....	..do.....	3.0	7.0	3.7	9.4
	Lavatory fittings: Combination 4" center-set fittings (with or without popup drains):					
34320 21	Single control type.....	..do.....	0.7	8.8	0.8	8.4
34320 22	Other type.....	..do.....	4.0	24.0	2.6	15.0
34320 23	Other combination fittings (with or without popup drains).....	..do.....	1.0	13.4	1.8	12.7
34320 29	Other lavatory fittings, including popup drains sold separately, and single lavatory faucets.....	..do.....	2.6	9.6	4.1	7.7
	Sink fittings: Deck-type combination sink faucets:					
34320 31	Single control type.....	..do.....	1.9	26.1	1.3	15.5
34320 32	Other type.....	..do.....	3.5	24.2	3.2	19.5
34320 33	Other combination sink faucets.....	..do.....	1.5	10.8	1.3	7.9
34320 39	Other sink fittings, including sink strainers sold separately, and single sink faucets.....	..do.....	10.9	15.8	10.7	12.0
	Miscellaneous items:					
34320 47	Compression stops, including those with drains.....	..do.....	13.2	7.9	14.0	10.0
34320 48	Sediment, lawn, hose bibb and still faucets.....	..do.....	11.7	11.3	13.7	10.3
34320 45	P-traps.....	..do.....	9.2	11.1	7.9	10.0
34320 46	S-traps.....	..do.....	3.1	4.5	2.7	4.4
34320 51	Lawn hose nozzles and lawn sprinklers.....	..do.....	(X)	19.9	(X)	26.6
34320 53	Water closet tank flushing controls.....	..do.....	(X)	17.1	(X)	20.0
34320 61	Flush valves.....	..do.....	(X)	21.3	(X)	72.1
34320 98	Other miscellaneous items, including double laundry-tray faucets.....	..do.....	(X)	55.8	(X)	
34320 00	Plumbing fixture fittings and trim, n.s.k. (For establishments with more than 10 employees. See Note.).....		(X)	55.6	(X)	20.8
34320 02	Plumbing fixture fittings and trim, n.s.k. (For establishments with fewer than 10 employees. See Note.).....		(X)	4.7	(X)	

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind. (X) Not applicable.



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
INDUSTRY 3432.--PLUMBING FITTINGS AND BRASS GOODS						
	Materials, parts, containers, and supplies, total.....		(X)	193.7	(X)	156.9
	Mill shapes and forms (except castings):					
	Carbon steel:					
331012	Sheet and strip.....	1,000 short tons.	8.4	3.0	4.3	0.8
331013	Plates.....	do.....				
331019	All other carbon steel mill shapes and forms.....	do.....				
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	do.....	8.4	3.0	0.3	(Z)
331029	All other alloy steel mill shapes and forms.....	do.....				
331031	Stainless steel mill shapes and forms.....	do.....				
	Copper and copper-base alloy:					
335790	Insulated wire and cable.....	Million lbs. (copper content).	(1)	(1)	(2)	(2)
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	63.9	27.8	47.3	21.1
335123	Plate, sheet, and strip (including military cups and discs)...	do.....	7.5	4.6	10.2	4.4
335127	Pipe and tube.....	do.....	23.7	15.0	33.0	15.8
	Aluminum and aluminum-base alloy:					
335205	Extruded shapes, rod, bar, etc.....	do.....	(1)	(1)	0.7	(Z)
335209	All other aluminum mill shapes and forms (wire, rolled, bar, sheet, plate, foil, etc.).....	do.....				
	Primary metals:					
331051	Pig iron.....	1,000 short tons.	-	-	(2)	(2)
333401	Aluminum and aluminum-base alloy refinery shapes.....	do.....	(1)	(1)	(2)	(2)
333122	Copper and copper-base alloy refinery shapes.....	do.....	22.9	15.8	30.5	13.7
	Scrap (excluding home scrap):					
999811	Iron and steel.....	do.....	(1)	(1)	-	-
999808	Aluminum and aluminum-base alloy.....	do.....	-	-	(2)	(2)
999812	Copper and copper-base alloy.....	do.....	(1)	(1)	6.8	3.4
	Castings (rough and semifinished): <sup>3</sup>					
332011	Iron (gray and malleable).....	do.....	7.0	3.2	4.0	1.1
332300	Steel.....	do.....	(1)	(1)	(2)	(2)
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	(1)	(1)	(2)	(2)
336200	Copper and copper-base alloy.....	do.....	31.0	19.8	19.4	10.1
339100	Iron and steel forgings <sup>3</sup> .....	1,000 short tons.	(1)	(1)	(2)	(2)
970099	All other materials, and components, parts, containers, and supplies consumed.....		(X)	89.5	(X)	69.2
976000	Materials, components, parts, containers, and supplies consumed, n.s.k. <sup>3</sup> <sup>4</sup> .....		(X)	15.0	(X)	12.3

-Represents zero. (X) Not applicable. (Z) Less than 0.1 when rounded.

<sup>1</sup>Included with material code 970099, "All other materials and components, etc." The value of these individual materials consumed is less than 2.5 million.<sup>2</sup>Included with material code 970099, "All other materials and components, etc." to avoid disclosing figures for individual companies.<sup>3</sup>No data are available for castings or forgings produced and consumed in the same establishment.<sup>4</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3432, these small establishments accounted for approximately 0 percent of payrolls and 0 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

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*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

**U.S. DEPARTMENT OF COMMERCE  
BUREAU OF THE CENSUS  
WASHINGTON, D.C. 20233**

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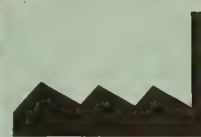
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# 1967 CENSUS OF MANUFACTURES



MC67(P)-34B-3

## INDUSTRY SERIES

### Heating equipment, except electric

SIC Code 3433

**preliminary  
report**

The Heating Equipment, Except Electric, Industry includes establishments primarily engaged in manufacturing heating equipment for all purposes other than power, including all gas, oil, and stoker coal fired equipment for the automatic utilization of gaseous, liquid, and solid fuels. Establishments primarily engaged in manufacturing cooking stoves and ranges are classified in industry 3631; boilershops primarily engaged in the production of industrial, power, and marine boilers in industry 3443; and industrial process furnaces and ovens in industry 3567.

The classification of establishments for which data are tabulated in this report is based upon the

definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Heating Equipment, Except Electric, Industry amounted to \$1,037.6 million, an increase of 2 percent compared with 1963. Value added by manufacture at \$529.0 million in 1967 was 7 percent more than value added in 1963. Average employment in the industry showed a decrease of 7 percent from 1963 to a total of 38.9 thousand employees in 1967.

Of the \$1,037.6 million total value of shipments and other receipts of establishments classified as heating equipment, except electric, \$206.5 mil-

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (per-cent)	Coverage ratio (per-cent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3433.--HEATING EQUIPMENT, EXCEPT ELECTRIC														
1967 Census....	531	243	38.9	254.5	27.8	55.1	154.5	529.0	513.2	1,037.6	24.6	223.8	82	80
1966 ASM <sup>1</sup> .....	(NA)	(NA)	43.7	275.2	31.6	64.8	172.8	559.5	632.7	1,167.3	25.0	253.8	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	43.3	264.8	30.5	62.8	163.5	533.8	588.4	1,124.1	24.3	225.7	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	43.8	258.7	31.3	62.4	161.9	538.6	569.2	1,089.3	15.8	224.5	(NA)	(NA)
1963 Census....	648	280	42.0	243.9	30.2	60.0	154.4	495.7	525.5	1,019.8	17.8	204.2	76	81
1962 ASM <sup>1</sup> .....	(NA)	(NA)	43.9	245.0	31.1	61.5	149.8	522.5	531.5	1,046.3	12.8	197.9	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	45.3	247.7	32.5	63.4	155.4	505.7	544.7	1,052.9	14.5	198.2	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	45.7	243.9	33.2	64.3	152.8	511.9	517.2	1,019.4	13.1	199.5	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	46.7	243.2	34.2	66.6	155.0	487.0	542.9	1,021.0	13.4	196.7	(NA)	(NA)
1958 Census <sup>2</sup> ...	672	303	44.7	222.7	32.4	63.2	142.3	432.8	470.6	912.9	13.4	181.0	81	80

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued December 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary  
 Rocco C. Siciliano, Under Secretary  
 Harold C. Passer, Assistant Secretary for Economic Affairs  
**BUREAU OF THE CENSUS** George Hay Brown, Director



lion were products primary to other industries; and \$74.9 million were receipts for miscellaneous activities. The industry shipments of primary products represented 82 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 76 percent in 1963.

The total value of heating equipment, except electric, shipped by all producers in 1967 was \$944.5 million of which \$756.2 million, or 80 percent, were shipped by plants classified in industry 3433, Heating Equipment, Except

Electric, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 81 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3433, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA34N, Heating and Cooking Equipment and MA35H, Fans, Blowers, Unit Heaters and Accessory Equipment.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
	INDUSTRY 3433.--HEATING EQUIPMENT, EXCEPT ELECTRIC												
United States, total.....	531	243	38.9	254.5	27.8	55.1	154.5	529.0	513.2	1,037.6	24.6	42.0	495.7
New England.....	38	12	1.3	9.1	0.9	1.9	5.2	17.9	16.5	34.2	0.5	1.6	16.4
Massachusetts.....	21	6	0.8	4.9	0.6	1.2	3.1	8.8	8.2	16.9	(D)	0.8	7.9
Middle Atlantic.....	156	74	13.2	89.1	9.4	18.2	55.2	183.0	160.7	345.5	9.7	12.0	156.8
Pennsylvania.....	68	37	7.5	50.6	5.3	10.4	31.4	107.7	82.9	187.6	(D)	5.7	80.4
East North Central....	138	73	11.4	81.1	7.6	15.3	45.0	161.0	168.0	324.3	6.2	17.4	207.8
Ohio.....	40	20	3.8	28.3	2.6	5.1	16.3	61.7	69.8	129.4	1.9	6.6	88.4
Indiana.....	16	10	1.5	10.7	1.0	1.9	5.2	22.3	26.9	48.1	1.0	3.1	37.8
Illinois.....	38	21	3.3	22.4	2.3	4.5	12.7	43.7	38.2	80.8	1.8	3.9	48.7
Michigan.....	32	13	1.1	7.7	0.7	1.5	4.3	15.7	19.6	35.2	0.7	1.7	14.7
Wisconsin.....	12	9	1.7	12.0	1.1	2.2	6.5	17.3	13.5	30.7	0.8	2.1	18.2
West North Central....	50	17	3.6	21.7	3.0	6.3	16.7	56.8	61.3	114.6	2.5	3.1	38.3
South.....	75	38	7.0	37.6	5.1	10.1	22.8	74.1	76.9	152.0	4.7	5.2	45.4
Maryland.....	5	4	0.2	1.2	0.1	0.3	0.7	2.4	2.9	5.1	(Z)	(D)	(D)
West South Central..	26	7	0.9	4.3	0.7	1.4	3.2	6.5	6.3	12.7	0.6	(D)	(D)
West.....	74	29	2.4	16.0	1.8	3.4	9.6	36.3	29.8	67.0	1.0	2.8	31.0
California.....	49	23	1.7	11.9	1.3	2.4	6.8	26.6	21.0	49.0	0.7	2.4	27.5

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3433- --	HEATING EQUIPMENT, EXCEPT ELECTRIC, TOTAL.....		(X)	944.5	(X)	893.2
34331 --	Oil burners, residential, commercial, and industrial (sold separately), except parts.....		(X)	35.2	(X)	42.0
34331 10	Reported in the census of manufactures.....		(X)	30.5	(X)	36.8
	Reported on annual Form MA-34N (excluding furnace burner and boiler-burner units).....	1,000 units...	396.7	30.8	423.6	34.7
	Residential (sold separately):					
34331 13	High-pressure atomizing.....	do.....	361.9	17.7	369.7	18.9
34331 11	Low-pressure atomizing.....	do.....				
34331 15	Pot natural draft vaporizing.....	do.....			10.8	0.7
34331 17	Pot mechanical draft vaporizing.....	do.....	10.6	0.6		
34331 19	Rotary (atomizing and vaporizing).....	do.....			1.5	0.2
	Commercial and industrial (sold separately): <sup>1</sup>					
34331 25	Low-pressure atomizing.....	do.....	6.5	4.2	20.4	5.0
34331 27	High-pressure atomizing.....	do.....	16.4	6.6	17.1	5.3
34331 29	Rotary atomizing.....	do.....	1.3	1.7	4.1	4.5
	Boiler-burner units:					
	Residential:					
34331 31	High-pressure atomizing.....	1,000 units...	42.3	(X)	49.7	(X)
34331 39	All other.....	do.....	12.0	(X)	10.1	(X)
34331 45	Commercial and industrial.....	do.....	5.5	(X)	3.2	(X)
	Furnace-burner units:					
	Residential:					
34331 51	High-pressure atomizing.....	do.....	54.8	(X)	74.0	(X)
34331 59	All other.....	do.....	1.8	(X)	2.7	(X)
34331 65	Commercial and industrial.....	do.....	(D)	(X)	(D)	(X)
34331 71	Oil burners, range type (sleeve-type and pot-type for use in water heaters, stoves, ranges, etc.).....		(X)	2.5	(NA)	2.4
34331 00	Oil burners, n.s.k.....		(X)	2.2	(X)	2.8
34332 --	Warm air furnaces (except floor and wall, and parts)					
34332 00	Reported in the census of manufactures.....		(X)	215.5	(X)	204.5
	Reported on annual Form MA-34N.....	1,000 units...	1,448.7	213.6	1,384.5	197.5
	Forced air type (cast iron and steel):					
	Solid fuel (coal, coke, and wood):					
34332 01	150,000 B.t.u. bonnet output and under.....	do.....	2.2	0.6	11.4	2.8
34332 02	Over 150,000 B.t.u. bonnet output.....	do.....	0.1	0.1	0.9	0.4
	Oil:					
34332 04	150,000 B.t.u. bonnet output and under.....	do.....	285.0	52.1	240.6	47.6
34332 05 06	Over 150,000 B.t.u. bonnet output.....	do.....	13.7	5.5	18.4	8.3
	Gas:					
34332 07	150,000 B.t.u. bonnet output and under.....	do.....	1,118.6	140.7	1,067.9	123.2
34332 08 09	Over 150,000 B.t.u. bonnet output.....	do.....	23.3	13.9	25.4	12.2
	Gravity air-flow type (cast iron and steel):					
34332 31	Solid fuel.....	do.....	1.2	0.3	9.5	1.8
34332 35	Oil.....	do.....	(Z)	(Z)	0.2	(Z)
34332 37	Gas.....	do.....	3.8	0.4	10.2	1.0
34333 --	Cast iron heating boilers, radiators, and convectors, except parts, total.....		(X)	133.3	(X)	138.8
	Cast iron boilers:					
34333 20	Reported on annual Form MA-34N.....	Million lbs...	185.2	79.2	188.5	73.7
	Reported in the census of manufactures.....	do.....	(X)	76.3	188.5	73.7
34333 11	Oil.....	do.....			63.7	22.7
34333 15	Solid fuel.....	do.....	92.6	33.5	24.3	8.2
34333 13	Gas.....	do.....	97.0	42.8	100.5	42.8
	Radiators and convectors:					
	Cast iron:					
34333 30 34333 50	Reported in the census of manufactures.....		(X)	8.9	(X)	12.6
	Reported on annual Form MA-34N.....	Million sq.ft. of radiation..	9.8	7.8	15.9	12.5
34333 81	Steel, residential and industrial.....	do.....	(NA)	4.4	19.7	7.8
	Aluminum, including baseboard and finned tube type:					
34333 72	Residential.....	do.....	60.9	25.8	63.5	22.7
34333 74	Industrial and special types.....	do.....	25.4	13.6	(NA)	17.1
34333 79	Other nonferrous metal.....	do.....				
34333 00	Heating boilers, radiators, and convectors, n.s.k.....		(X)	4.3	(X)	4.9

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3433- --	HEATING EQUIPMENT, EXCEPT ELECTRIC--Continued					
34334 --	Domestic heating stoves (except electric), except parts:					
34334 00	Reported in the census of manufactures.....	(X)		50.1	(X)	79.1
	Reported on annual Form MA-34N.....	1,000 units....	1,491.2	52.5	2,306.9	76.1
	Gas:					
34334 11	Vented circulators.....	...do.....	311.6	20.5	410.2	28.1
34334 13	Unvented circulators.....	...do.....	491.0	7.9	667.4	8.7
34334 15	Radiants.....	...do.....	80.3	1.6	184.5	2.4
34334 17	All other (including laundry stoves).....	...do.....	37.0	1.2	82.5	1.6
34334 27	Wood (sheet-metal airtight types).....	...do.....	144.3	0.8	279.5	1.4
	Coal and wood (other than sheetmetal airtight types):					
34334 31	Circulators (standard and magazine types).....	...do.....	31.6	2.5	79.0	4.8
34334 33	Magazine radiants.....	...do.....	32.6	1.1	61.0	2.0
34334 39	All other (including kitchen heaters, caboose, schoolroom, woodbox, oaks and hot blasts, and laundry stoves).....	...do.....	91.1	3.1	129.8	2.7
	Kerosene, gasoline, and fuel oil:					
34334 41	Flue-connected circulators and radiant circulators with vaporizing pot-type burners.....	...do.....	115.2	9.6	220.7	22.3
34334 43	Flue-connected radiant heaters (without casing) and trailer heaters, equipped with vaporizing pot-type burners.....	...do.....	51.1	3.0		
34334 45	Flue-connected heater equipped with sleeve burner.....	...do.....	105.3	1.2	192.3	2.1
34334 47	Unvented portable kerosene heaters.....	...do.....				
34335 --	Steel heating boilers (15 p.s.i. and under), except parts, total..		(X)	56.2	(X)	70.3
	Steel heating boilers (15 p.s.i. steam working pressure and under and all hot water boilers):					
34335 12	294 sq. ft. of heating surface or less.....	1,000 units....	91.7	35.6	114.3	36.9
34335 15	Gross output of these boilers.....	1,000 b.t.u./hr	25,109.3	(X)	(NA)	(X)
	Over 294 sq. ft. of heating surface:					
34335 21	Horizontal fire box.....	1,000 units....	1.7	7.3	1.6	7.1
34335 25	Gross output of these boilers.....	1,000 b.t.u./hr	8,014.4	(X)	(NA)	(X)
34335 31	Scotch type.....	1,000 units....	4.0	9.7	2.9	16.1
34335 34	Other.....	...do.....	9,633.4	(X)	(NA)	7.8
34335 35	Gross output, scotch type.....	1,000 b.t.u./hr			(NA)	(X)
34335 45	Gross output, other.....	...do.....			(NA)	(X)
34335 00	Steel heating boilers, n.s.k.....		(X)	3.6	(X)	2.2
34336 --	Other heating equipment, except electric, including parts for nonelectric heating equipment, total.....		(X)	379.7	(X)	317.3
	Gas burners (for furnaces, boilers, water heaters, etc.):					
34336 12	Residential, commercial and industrial, sold separately (except gas conversion).....	1,000 units....	(NA)	33.0	69.9	14.9
34336 14	Gas conversion burners, residential, commercial, and industrial.....	...do.....	101.8	10.1	105.9	10.2
34336 18	Parts and attachments for gas burners (sold separately).....		(X)	8.8	(X)	9.1
34336 20, 30, 34, 39, 40, 50, 54, 59, 60	Floor and wall furnaces, unit heaters, duct furnaces, heat transfer coils range boilers, expansion tanks, hot water storage tanks, mechanical stokers, parts for unit heaters and ventilators, and unit ventilators, total:					
	Reported in the census of manufactures.....		(X)	162.8	(X)	147.0
	Reported in the current industrial reports (listed below).....		(X)	149.5	(X)	141.6
	Floor and wall furnaces:					
	Gas fired:					
34336 21	Floor furnaces, including dual register.....	1,000 units....	47.1	3.8	72.0	5.1
34336 23	Wall furnaces, panel type.....	...do.....	382.5	27.9	424.0	26.4
	Oil fired:					
34336 25	Floor furnaces, including dual register.....	...do.....	10.3	1.5	10.5	1.5
34336 27	Wall furnaces, panel type.....	...do.....	6.1	0.8	19.7	2.0
	Unit heaters:					
	Gas-fired:					
34336 32	Centrifugal fan type.....	1,000 units....	12.0	3.1	7.7	1.6
34336 37	Propeller fan type.....	...do.....	179.5	24.5	131.9	18.4
	Steam or hot water heating elements:					
34336 31	Centrifugal fan type (blower).....		(X)	14.8	(X)	13.7
34336 36	Propeller fan type.....		(X)	13.4	(X)	12.3

See footnotes at end of table.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963--Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3433- --	HEATING EQUIPMENT, EXCEPT ELECTRIC--Continued					
	Other heating equipment, except electric, including parts for nonelectric heating equipment--Continued					
	Duct furnaces.....	1,000 units...	33.5	5.6	32.8	5.9
	Heat transfer coils:					
34336 41	Copper or aluminum.....		(X)	12.3	(X)	7.8
34336 42	All other.....		(X)	1.2	(X)	1.4
	Range boilers, expansion tanks and hot water storage tanks:					
34336 51	Range boilers.....	1,000 units...	30.7	0.8	33.1	0.8
34336 53	Expansion tanks (including basement tanks).....	..do.....	220.8	2.9	207.9	2.6
34336 55	Hot water storage tanks.....	..do.....	29.7	5.6	34.8	5.4
	Mechanical stokers:					
34336 56	Class 1 (capacity under 61 pounds of coal per hour): Bituminous.....	1,000 units...	1.2	0.2	2.3	0.5
34336 57	Anthracite:					
	Conversion stokers <sup>2</sup> .....	..do.....	1.0	0.7	0.1	(Z)
34336 62	Integral units <sup>3</sup> .....	..do.....			4.1	2.5
34336 63	Class 2 (capacity 61 to 100 pounds of coal per hour): Bituminous.....	..do.....	0.3	0.1	0.1	0.2
34336 64	Anthracite.....	..do.....	(Z)	(Z)	0.1	(Z)
34336 65	Class 3 (capacity 100 to 300 pounds of coal per hour).....	..do.....	0.1	0.2	0.3	0.4
34336 66	Class 4 (capacity 301 to 1,200 pounds of coal per hour).....	..do.....	0.1	0.2	0.3	0.4
34336 67	Class 5 (capacity 1,201 pounds of coal per hour and over): Installed under fire-tube boilers.....	..do.....	0.1	2.1	0.2	5.5
34336 68	Installed under water-tube boilers.....	..do.....				
	Parts for unit heaters and unit ventilators.....		(X)	1.2	(X)	2.0
	Unit ventilators.....		52.0	26.4	(X)	26.0
34336 35	Heavy duty forced warm air type (over 400,000 BTU/hr.).....		(NA)	5.5	(NA)	2.7
34336 61	Tanks for water heaters (sold separately).....	1,000 units...	( <sup>4</sup> )	( <sup>4</sup> )	250.4	5.4
	Parts and attachments for heating equipment (sold separately):					
34336 73	For warm air furnaces.....		(X)	10.9	(X)	17.6
34336 74	For cast iron and steel heating boilers.....		(X)	3.1	(X)	15.5
34336 83	For mechanical stokers.....		(X)	2.1	(X)	3.0
34336 85	For oil burners.....		(X)	11.2	(X)	14.6
34336 98	Other heating equipment, except electric (including incinerators, solar heaters, and circulating fireplace heaters) and other parts for heating equipment, except electric (sold separately).....		(X)	118.6	(X)	60.4
34336 00	Other heating equipment, n.s.k.....		(X)	13.6	(X)	16.9
34330 00	Heating equipment, n.s.k. (For establishments with 10 or more employees, See Note).....		(X)	65.7	(X)	41.2
34330 02	Heating equipment, n.s.k. (For establishments with fewer than 10 employees, See Note.).....		(X)	8.8		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

- Represents zero. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable. (Z) Less than 0.1 when rounded.

<sup>1</sup>Commercial and industrial burners are those with consumption rates of 6 gallons per hour or more.

<sup>2</sup>Conversion stoker-a conversion stoker is a mechanical stoker which may be installed in any of the common types of furnaces or boilers.

<sup>3</sup>Integral unit-an integral unit consists of a boiler or furnace, an automatic coal feeding mechanism, accessories and usually a metal enclosure, the whole assembly having been designed as a complete, compact and coordinated heating unit.

<sup>4</sup>Included with product code 34336 98 "other heating equipment" etc. to avoid disclosing operations of individual companies.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3433--HEATING EQUIPMENT, EXCEPT ELECTRIC					
	Materials, parts, containers, and supplies, total.....		(X)	522.5	(X)	470.1
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	11.6	2.5	11.3	2.0
331012	Sheet and strip.....	do.	305.1	49.8	371.6	59.3
331013	Plates.....	do.	60.8	11.4	49.3	7.0
331015	Structural shapes.....	do.	8.1	1.9	3.0	0.6
331017	Wire and wire products.....	do.	4.6	1.7	1.7	0.6
331019	All other carbon steel mill shapes and forms.....	do.	11.7	2.6	15.1	3.8
331020	Alloy steel (except stainless).....	do.	(NA)	0.9	8.3	2.9
331031	Stainless steel.....	do.	4.4	5.2	2.9	3.4
	Copper and copper-base alloy:					
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	6.7	4.4	2.5	1.0
335123	Plate, sheet, and strip (including military cups and discs).. Pipe and tube.....	do.	2.8	2.2	1.8	1.1
335127		do.	25.0	14.5	13.4	8.6
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	do.	14.8	6.2	16.8	6.8
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, etc.).....	do.	4.0	1.6	1.5	0.6
331051	Pig iron.....	1,000 short tons.	40.8	2.5	61.2	3.8
999811	Iron and steel scrap (excluding home scrap).....	do.	82.5	3.1	101.6	3.7
	Casting (rough and semifinished): <sup>1</sup>					
332011	Iron (gray and malleable).....	do.	29.1	13.7	31.2	10.7
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	3.9	3.2	3.9	2.9
336200	Copper and copper-base alloy.....	do.	3.3	2.5	1.7	1.2
	Electric motors and generators: <sup>1</sup>					
362110	Fractional horsepower electric motors (under 1 hp.) Timing motors, synchronous and subsynchronous.....	1,000.....	1,275.3	13.0	718.7	8.1
362115	Other fractional horsepower electric motors.....	do.	1,201.1	15.8	1,566.7	17.9
362120	Integral horsepower motors and generators (1 hp. and over).....	do.	42.4	3.0	24.3	1.7
	Bearings:					
356218	Ball.....		(X)	(D)	(X)	0.5
356201	Roller.....		(X)	-		
970099	All other materials and components, parts, containers, and supplies.....		(X)	252.8	(X)	264.3
976000	Materials, components, parts, containers, and supplies consumed, n.s.k. <sup>2</sup> .....		(X)	108.0	(X)	57.3

- Represents zero. (D) Included with material code 970099 "all other materials and component, parts, containers, and supplies," to avoid disclosing figures for individual companies. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>No data are available for castings or electric motors and generators produced and consumed in the same establishment.

<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3433, these small establishments accounted for approximately 0.7 percent of payrolls and 0.7 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products**--In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture**--This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment**--For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories**--Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

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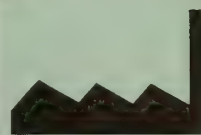
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OFFICIAL BUSINESS



# 1967 CENSUS OF MANUFACTURES



MC67(P)-34C-1

## INDUSTRY SERIES

**preliminary  
report**

### Fabricated structural steel

SIC Code 3441

The Fabricated Structural Steel Industry includes establishments primarily engaged in manufacturing fabricated iron and steel or other metal for structural purposes, for bridges, buildings; and sections for ships, boats, and barges. Establishments primarily engaged in manufacturing metal doors, sash, frames, molding, and trim are classified in industry 3442; and fabrication work done by construction contractors at the site of construction is classified in construction industries.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Fabricated Structural Steel Industry amounted to \$2,996.1 million, an increase of 56 percent compared with 1963. Value added by manufacture at \$1,327.5 million in 1967 was 61 percent more than value added in 1963. Average employment in the industry showed an increase of 28 percent from 1963 to a total of 108.9 thousand employees in 1967.

Of the \$2,996.1 million total value of shipments and other receipts of establishments classified as fabricated structural steel, \$285 million were products primary to other industries; and \$354 million were receipts for miscellaneous activities. The industry shipments of primary prod-

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3441.--FABRICATED STRUCTURAL STEEL														
1967 Census....	1,962	1,036	108.9	785.8	81.1	165.3	517.2	1,327.5	1,640.5	2,996.1	77.8	606.6	89	93
1966 ASM <sup>1</sup> .....	(NA)	(NA)	97.4	665.2	73.4	148.5	443.8	1,059.7	1,498.6	2,601.7	*46.1	614.4	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	93.1	609.7	69.8	141.6	405.2	1,038.7	1,357.2	2,314.5	54.9	659.3	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	88.1	562.1	65.5	134.9	376.1	877.2	1,252.8	2,097.7	37.9	531.1	(NA)	(NA)
1963 Census....	1,718	817	85.4	527.2	63.7	127.9	350.3	814.8	1,141.0	1,916.0	28.2	497.9	86	89
1962 ASM <sup>1</sup> .....	(NA)	(NA)	79.2	483.6	59.0	121.5	315.8	697.8	1,065.5	1,795.1	19.2	429.8	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	84.3	494.9	62.4	126.4	321.6	776.1	1,038.0	1,814.1	25.2	463.4	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	87.9	510.0	63.9	133.4	326.4	820.0	1,070.2	1,834.5	27.2	473.1	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	82.7	462.5	59.9	119.9	290.6	702.0	970.3	1,710.5	28.4	418.2	(NA)	(NA)
1958 Census <sup>2</sup> ...	1,861	780	91.3	502.7	68.0	135.8	332.7	821.6	1,017.7	1,901.1	37.7	465.5	87	91

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

**BUREAU OF THE CENSUS** George Hay Brown, Director



ucts represented 89 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 86 percent in 1963.

The total value of fabricated structural steel shipped by all producers in 1967 was \$2,546.9 million of which \$2,357.1 million, or 93 percent, were shipped by plants classified in industry 3441, Fabricated Structural Steel, while the remainder was shipped by plants classified in

other industries. This percent, called the coverage ratio, was 89 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3441.--FABRICATED STRUCTURAL STEEL													
United States, total.....	1,962	1,036	108.9	785.8	81.1	165.3	517.2	1,327.5	1,640.5	2,996.1	77.8	85.4	814.8
New England.....	99	44	3.5	27.8	2.6	5.3	17.5	46.2	57.0	104.4	1.8	2.8	29.3
Massachusetts.....	52	22	1.8	14.1	1.4	2.7	9.6	23.4	25.2	48.7	0.9	1.4	11.8
Rhode Island.....	7	3	0.2	1.0	0.1	0.2	0.8	1.1	2.5	3.5	0.1	0.2	1.9
Connecticut.....	29	12	0.8	7.0	0.5	1.2	3.9	12.5	15.3	28.8	0.4	0.7	8.4
Middle Atlantic.....	442	216	23.9	174.4	17.6	33.6	115.2	295.2	352.4	664.2	17.4	21.9	197.1
New York.....	201	85	6.4	49.1	4.8	9.5	33.0	77.2	89.9	172.8	3.1	5.7	66.3
New Jersey.....	88	41	3.3	26.1	2.3	4.7	16.5	54.2	51.9	110.4	1.3	2.9	33.0
Pennsylvania.....	153	90	14.1	99.1	10.4	19.4	65.6	163.9	210.5	381.0	13.0	13.4	97.8
East North Central....	447	231	25.2	195.0	17.9	37.0	120.5	345.9	382.6	721.4	19.0	18.7	202.0
Ohio.....	122	68	5.6	42.2	4.1	8.6	27.3	75.3	91.6	165.9	3.5	4.6	45.3
Indiana.....	55	31	4.9	35.5	3.5	7.1	22.4	53.1	80.4	127.8	4.5	4.7	42.4
Illinois.....	129	63	5.5	42.6	4.1	8.4	28.2	81.5	72.2	154.3	6.1	4.2	46.3
Michigan.....	96	46	6.4	52.8	4.4	9.2	31.3	101.1	100.8	202.3	2.6	3.5	48.9
Wisconsin.....	45	23	2.8	21.9	1.8	3.6	11.3	34.9	37.6	71.1	2.3	1.6	19.1
West North Central....	131	77	7.5	53.9	5.7	11.9	35.7	91.0	132.5	225.2	5.0	5.7	61.8
Minnesota.....	29	15	1.2	9.5	1.0	2.1	6.7	16.6	22.2	39.2	2.4	0.9	8.8
Iowa.....	20	12	1.7	11.4	1.3	2.7	8.2	14.1	30.3	47.6	0.5	1.0	10.7
Missouri.....	46	24	2.1	16.0	1.6	3.3	10.1	30.6	37.3	66.7	0.9	1.6	22.9
Nebraska.....	12	9	0.9	5.6	0.6	1.2	3.3	8.0	19.7	27.7	0.3	0.6	4.8
Kansas.....	21	14	1.3	8.8	1.0	2.0	6.0	17.9	16.0	33.1	0.7	1.1	11.5
South Atlantic.....	219	138	11.4	74.1	8.5	18.3	46.6	125.3	182.4	307.3	7.3	9.0	78.3
Maryland.....	29	17	1.2	8.1	0.9	1.8	4.8	14.0	15.4	29.3	(D)	1.0	9.3
Virginia.....	41	25	2.8	18.5	2.1	4.6	11.8	31.2	47.9	78.3	1.9	2.5	24.0
North Carolina.....	28	21	1.8	12.2	1.3	2.9	7.5	21.8	35.4	56.4	0.7	1.4	11.7
South Carolina.....	21	14	1.3	8.4	1.0	2.4	5.5	15.1	29.5	44.6	1.1	0.9	7.7
Georgia.....	33	17	1.2	7.6	0.8	1.7	4.1	11.1	16.3	27.1	1.0	0.9	6.9
Florida.....	50	29	2.1	12.9	1.6	3.4	8.5	19.4	28.0	48.0	0.7	1.6	12.2
East South Central....	105	61	6.1	38.9	4.8	10.1	26.4	72.5	90.2	163.3	4.5	5.5	46.7
Kentucky.....	10	3	0.2	1.1	0.1	0.3	0.6	2.2	3.1	5.5	0.1	0.2	1.8
Tennessee.....	39	27	2.2	14.0	1.7	3.6	9.4	28.8	30.6	58.7	2.2	1.9	15.7
Alabama.....	41	24	3.0	19.2	2.4	5.0	13.8	30.3	41.0	72.0	1.5	2.9	23.7
Mississippi.....	15	7	0.7	4.6	0.5	1.1	2.6	11.2	15.5	27.0	0.7	0.5	5.5
West South Central....	200	118	14.8	93.5	11.6	25.1	65.2	148.2	223.7	372.9	11.0	10.7	76.8
Arkansas.....	14	8	1.1	6.0	0.8	1.8	4.0	6.7	25.5	32.4	1.2	0.6	6.1
Louisiana.....	40	23	3.0	20.7	2.5	5.3	16.7	33.5	41.9	75.6	2.0	0.8	11.5
Oklahoma.....	27	17	3.4	21.5	2.5	5.2	13.7	31.8	42.7	73.4	1.8	2.2	14.0
Texas.....	119	70	7.4	45.3	5.7	12.9	30.8	76.2	113.6	191.6	6.0	7.0	45.2
Mountain.....	70	40	3.1	22.5	2.3	4.4	14.5	36.0	44.0	79.0	1.3	2.7	24.7
Colorado.....	21	14	0.8	5.7	0.6	1.2	3.7	9.8	10.5	19.9	0.4	0.6	5.0
Arizona.....	16	9	1.1	7.9	0.8	1.3	4.8	12.1	11.6	23.1	0.6	1.0	10.6
Utah.....	12	6	0.6	3.9	0.4	0.9	2.8	6.1	10.8	16.9	0.1	0.5	5.2
Nevada.....	4	3	0.1	1.2	0.1	0.2	1.0	1.8	1.5	3.2	(D)	(D)	(D)
Pacific.....	249	111	13.3	105.9	10.2	19.6	75.6	167.1	175.7	358.4	10.5	8.4	98.0
Washington.....	32	14	2.0	16.3	1.6	3.3	12.4	28.3	25.3	54.6	2.5	1.4	17.4
California.....	188	86	10.6	83.7	8.0	15.0	58.8	129.1	141.0	284.9	7.6	5.9	64.5

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3441 --	FABRICATED STRUCTURAL STEEL, TOTAL.....		(X)	2,546.9	(X)	1,804.0
34411 --	Fabricated structural metal for buildings.....		(X)	1,438.6	(X)	984.0
34411 21	Iron and steel (for sale to other companies): Industrial.....	1,000 short tons.....	<sup>e</sup> 1,785.4	585.1	996.9	306.9
34411 25	Commercial, residential, and institutional.....	..do.....	<sup>e</sup> 931.9	293.7	859.1	243.0
34411 27	Public utilities.....	..do.....	<sup>e</sup> 155.6	55.4	105.5	34.4
34411 61	Iron and steel (for installation by same company on the site of construction): Industrial.....	..do.....	<sup>e</sup> 649.8	228.0	452.3	160.1
34411 65	Commercial, residential, and institutional.....	..do.....	<sup>e</sup> 479.9	168.2	538.5	165.6
34411 67	Public utilities.....	..do.....	<sup>e</sup> 59.9	20.3	<sup>e</sup> 35.6	12.7
34411 71	Aluminum.....	..do.....	<sup>e</sup> 34.2	29.6	12.5	18.9
34411 00	Fabricated structural metal for buildings, n.s.k.....		(X)	58.3	(X)	42.4
34412 --	Fabricated structural metal for bridges.....	..do.....	(X)	313.5	(X)	224.9
34412 11	Iron and steel (for sale to other companies): Highway bridges, trestles, and viaducts.....	..do.....	<sup>e</sup> 567.2	197.2	506.5	136.1
34412 15	Railway bridges, trestles, and viaducts.....	..do.....	15.9	5.7	20.2	6.0
34412 51	Iron and steel bridges, trestles, and viaducts (highway and railway for installation by own company on the site of construction).....	..do.....	166.0	62.5	191.6	69.3
34412 71	Aluminum.....	..do.....	6.9	10.3	(NA)	3.1
34412 00	Fabricated structural metal for bridges, n.s.k.....		(X)	37.8	<sup>e</sup> (X)	10.3
34413 --	Other fabricated structural metal.....		(X)	521.4	(X)	287.2
34413 11	Iron and steel (for sale to other companies): For ships, boats, and barges.....	1,000 short tons.....	<sup>e</sup> 38.2	24.2	16.5	10.1
34413 41	For transmission towers, substations, radio antenna towers, and supporting structures.....	..do.....	292.8	111.6	152.0	50.5
34413 51	Other fabricated structural iron and steel (excluding pressure vessels and storage tanks, fabricated reinforcing bars, bar joists, fabricated metal building, steel flooring and roof decks).....	..do.....	<sup>e</sup> 539.4	229.8	<sup>e</sup> 343.4	122.1
34413 61	Iron and steel (for installation by same company on the site of construction or for shipbuilding): For ships, boats, and barges.....	..do.....	<sup>1</sup> 63.7	<sup>1</sup> 23.7	(NA)	<sup>1</sup> 32.5
34413 71	For transmission towers, substations, radio antenna towers, and supporting structures.....	1,000 short tons.....	54.6	24.4	57.7	23.3
34413 81	Other fabricated structural iron and steel (excluding pressure vessels and storage tanks, fabricated reinforcing bars, bar joists, fabricated metal buildings, steel flooring, and roof decks).....	..do.....	<sup>e</sup> 135.5	55.1	80.2	30.2
34413 84	Aluminum, for ships, boats, barges, transmission towers, and other structures (excluding tanks, fabricated metal buildings, etc.).....	..do.....	12.0	25.1	(NA)	1.8
34413 98	Structural metal, other than iron, steel, or aluminum.....	..do.....	(NA)	8.3	(NA)	1.6
34413 00	Other fabricated structural metal, n.s.k.....		(X)	19.2	(X)	15.0
34410 00	Fabricated structural metal, n.s.k. (Represents primarily establishments with 10 employees or more in 1967. See Note.)....		(X)	255.2	}	107.8
34410 02	Fabricated structural metal, n.s.k. (Represents primarily establishments with fewer than 10 employees in 1967. See Note.)....		(X)	18.2		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

<sup>e</sup> From 10 to 30 percent of this figure was estimated. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup> Does not include structural metal fabricated for own use by establishments building ships.



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3441.--FABRICATED STRUCTURAL STEEL					
	Materials, containers, parts, and supplies, total.....		(X)	1,351.6	(X)	947.2
	Mill shapes and forms (except castings):					
	Carbon steel:					
331009	Concrete reinforcing bars.....	1,000 short tons.	352.4	43.6	248.8	27.9
331010	Bars and bar shapes (except concrete reinforcing bars).....	do.....	374.6	59.9	362.0	53.2
331012	Sheet and strip.....	do.....	377.3	64.6	311.5	48.4
331013	Plates.....	do.....	1,074.5	166.4	969.6	143.0
331015	Structural shapes.....	do.....	3,103.4	477.0	2,432.4	354.6
331017	Wire and wire products.....	do.....	50.5	9.6	37.1	6.1
331019	All other carbon steel mill shapes and forms.....	do.....	164.7	30.3	157.4	30.7
	Alloy steel (except stainless):					
331021	Bar and bar shapes.....	do.....	25.1	5.3	9.9	1.7
331029	All other alloy steel mill shapes and forms.....	do.....	9.7	3.0	30.8	7.4
331031	Stainless steel.....	do.....	5.0	5.8	3.2	4.0
	Copper and copper-base alloy:					
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	(NA)	1.2	0.1	0.1
335123	Plate, sheet, and strip, including military cups and discs...	do.....			0.3	0.3
335127	Pipe and tube.....	do.....			2.3	0.4
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	do.....	24.0	11.2	11.6	6.0
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	do.....	27.4	13.9	10.2	4.7
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	do.....			3.4	1.8
	Primary metals (ingot, pig, etc.):					
333401	Aluminum and aluminum-base alloy refinery shapes (ingot, slugs, billet, etc.).....	1,000 short tons.	(4)	(4)	(3)	(3)
333348	Zinc and zinc-base alloy refinery shapes.....	do.....			(3)	(3)
	Scrap (excluding home scrap):					
999811	Iron and steel.....	do.....	(4)	(4)	10.7	0.5
999808	Aluminum and aluminum-base alloy.....	do.....			(NA)	(2)
	Castings (rough and semifinished):					
332011	Iron (gray and malleable).....	do.....	64.7	17.9	3.7	1.0
332300	Steel.....	do.....	(4)	(4)	20.8	8.5
336100	Aluminum and aluminum-base alloy.....	Million lbs.....			2.5	2.1
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	224.9	(X)	144.7
973000	Materials, etc., n.s.k.....		(X)	217.0	(X)	99.9

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable. (Z) Less than 0.1 when rounded.

<sup>1</sup>These figures are understated by \$10 million or less because of apparent undercoverage of carbon steel pipe and tube.<sup>2</sup>Included with material code 970099, "All other materials and components, etc."<sup>3</sup>Included with material code 970099, "All other materials and components, etc.," to avoid disclosing figures for individual companies.<sup>4</sup>Included with material code 970099, "All other materials and components, etc." The value of these individual materials consumed is less than \$2.5 million.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3441, these small establishments accounted for less than 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

**U.S. DEPARTMENT OF COMMERCE  
BUREAU OF THE CENSUS  
WASHINGTON, D.C. 20233**

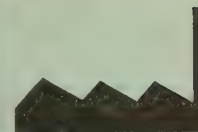
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**OFFICIAL BUSINESS**

**POSTAGE AND FEES PAID  
U.S. DEPARTMENT OF COMMERCE**



# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

**preliminary  
report**

### Metal doors, sash, and trim

SIC Code 3442

The Metal Doors, Sash, Frames, Molding, and Trim Industry includes establishments primarily engaged in manufacturing ferrous and nonferrous metal and metal covered doors and sash, window and door frames and screens, molding, and trim.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Metal Doors, Sash, and Trim Industry amounted to \$1,426.6 million, an increase of 14 percent compared with 1963. Value added by manufacture at \$660.9 million in 1967 was 16 percent more than value added in 1963. Average

employment in the industry showed an increase of 4 percent from 1963 to a total of 65,5 thousand employees in 1967.

Of the \$1,426.6 million total value of shipments and other receipts of establishments classified as metal doors, sash, and trim, \$181.2 million were products primary to other industries; and \$73.5 million were receipts for miscellaneous activities. The industry shipments of primary products represented 87 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 88 percent in 1963.

The total value of metal doors, sash, and trim shipped by all producers in 1967 was \$1,257.9 million of which \$1,171.9 million, or 93 percent,

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
INDUSTRY 3442.--METAL DOORS, SASH, AND TRIM														
1967 Census....	1,652	605	65.5	388.3	49.1	97.3	242.6	660.9	768.0	1,426.6	24.3	210.0	87	93
1966 ASM <sup>1</sup> .....	(NA)	(NA)	63.8	360.5	46.3	96.8	222.0	638.5	767.1	1,397.2	24.9	216.8	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	63.7	348.1	45.4	96.4	213.1	607.5	725.9	1,323.4	25.0	194.8	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	63.1	333.7	45.5	93.2	203.9	568.7	704.0	1,271.3	21.1	183.6	(NA)	(NA)
1963 Census....	1,817	628	62.8	324.8	46.6	95.7	206.1	570.4	681.4	1,253.8	21.3	180.0	88	94
1962 ASM <sup>1</sup> .....	(NA)	(NA)	59.3	307.1	43.4	96.1	189.1	541.3	636.5	1,172.9	23.7	158.9	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	57.8	284.7	42.3	91.2	174.6	489.8	607.3	1,100.7	17.6	150.9	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	61.6	299.9	44.8	94.4	183.9	506.0	612.6	1,126.8	19.3	159.4	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	59.8	287.0	44.0	89.3	176.6	500.1	635.4	1,139.2	*20.0	169.6	(NA)	(NA)
1958 Census <sup>2</sup> ...	1,546	560	57.9	273.2	42.4	83.8	171.8	469.0	570.8	1,037.4	18.1	161.8	91	93

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 2 and 2, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**

were shipped by plants classified in industry 3442, Metal Doors, Sash, and Trim, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 94 percent in 1963.

2, and 4 may be compared with the product statistics in table 3.

These ratios were developed to measure the extent to which the industry statistics in tables 1,

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)						
INDUSTRY 3442.--METAL DOORS, SASH, AND TRIM													
United States, Total.....	1,652	605	65.5	388.3	49.1	97.3	242.6	660.9	768.0	1,426.6	24.3	62.8	570.4
New England.....	123	38	2.8	15.7	2.1	4.0	9.7	27.5	30.2	57.8	0.6	2.9	26.5
Rhode Island.....	15	1	0.2	1.4	0.2	0.3	0.8	2.8	3.2	6.0	(Z)	0.3	2.6
Connecticut.....	31	13	0.9	5.3	0.6	1.2	2.9	9.1	9.8	19.0	0.1	0.9	8.6
Middle Atlantic.....	348	126	13.3	81.6	9.8	19.9	50.8	135.9	145.0	280.5	3.1	14.5	131.5
New York.....	170	65	6.0	38.9	4.4	8.8	23.5	62.9	54.2	117.3	1.2	6.8	59.1
New Jersey.....	76	27	2.2	12.7	1.7	3.5	8.5	24.0	27.2	51.4	0.6	2.8	25.4
Pennsylvania.....	102	34	5.0	30.0	3.8	7.5	18.8	49.0	63.5	111.8	1.3	4.8	46.9
East North Central....	348	136	17.6	111.5	13.2	26.3	71.1	190.9	216.1	406.9	8.1	17.3	162.5
Ohio.....	82	29	4.6	29.2	3.3	6.4	17.2	48.1	45.4	94.5	1.8	6.0	56.3
Indiana.....	31	15	2.2	13.2	1.7	3.3	8.4	20.2	22.5	42.2	1.6	2.0	18.7
Illinois.....	93	36	3.8	23.7	3.1	6.0	16.6	35.7	50.7	86.5	1.6	4.6	43.6
Michigan.....	108	45	5.1	33.1	3.8	7.6	20.8	67.4	77.4	144.4	2.2	4.1	37.6
Wisconsin.....	34	11	1.9	12.3	1.4	3.0	8.2	19.4	20.0	39.3	0.9	0.7	6.3
West North Central....	126	52	4.2	23.4	3.1	5.8	14.5	37.6	43.8	81.7	1.2	4.4	39.8
Minnesota.....	28	10	0.9	6.2	0.7	1.3	3.9	10.5	9.5	19.9	0.1	0.7	6.4
Iowa.....	17	7	0.4	2.2	0.4	0.7	1.5	3.8	3.5	7.1	0.6	0.4	2.8
Missouri.....	44	24	2.2	11.7	1.5	2.9	7.1	16.5	22.4	39.4	(D)	2.6	22.9
Kansas.....	19	5	0.5	2.1	0.4	0.6	1.3	4.3	5.9	10.2	(D)	0.6	6.5
South Atlantic.....	233	94	11.6	64.1	8.7	17.7	39.0	112.1	147.6	257.9	5.7	8.9	75.9
Maryland.....	17	8	0.8	5.1	0.5	0.9	2.1	12.3	13.7	23.9	(D)	0.3	4.4
Virginia.....	25	9	0.8	4.6	0.6	1.2	2.9	7.2	7.4	14.9	0.4	0.7	6.1
North Carolina.....	24	8	0.6	2.8	0.5	0.9	1.8	5.1	7.8	12.8	0.3	0.6	3.5
South Carolina.....	14	4	0.4	2.1	0.4	0.7	1.5	3.2	5.3	8.5	0.5	0.3	2.3
Georgia.....	41	15	3.6	20.8	2.7	5.9	14.0	32.2	53.4	86.6	1.4	2.2	21.6
Florida.....	99	48	5.3	28.1	3.9	7.9	16.4	51.2	58.6	108.9	1.9	0.4	37.0
East South Central....	80	28	2.9	14.0	2.2	4.7	9.2	24.3	36.2	60.1	1.2	2.6	20.8
Tennessee.....	28	10	0.8	3.7	0.6	1.3	2.5	7.2	10.2	17.4	(D)	0.7	5.7
Alabama.....	20	5	0.7	3.4	0.5	1.0	2.0	5.6	8.1	13.5	0.3	0.4	4.4
West South Central....	123	42	4.7	23.7	3.6	7.1	14.8	44.4	49.1	93.0	1.2	3.9	32.2
Arkansas.....	19	4	0.6	2.5	0.5	1.1	2.0	5.4	7.2	12.2	0.1	0.3	2.4
Texas.....	72	29	2.8	13.4	2.2	4.2	8.0	23.4	30.6	53.9	0.9	2.1	15.1
Mountain.....	31	12	0.6	4.3	0.4	0.8	2.0	7.8	6.6	14.3	0.3	0.6	5.6
Colorado.....	16	7	0.3	2.6	0.2	0.4	0.9	4.7	3.6	8.2	(Z)	0.3	3.1
Pacific.....	240	77	7.8	50.0	5.8	11.0	31.4	80.3	93.3	174.3	2.8	7.7	75.6
Washington.....	33	7	1.1	7.2	0.8	1.5	4.7	12.4	13.0	25.1	0.4	1.0	10.4
California.....	188	66	6.4	40.2	4.7	8.9	25.0	63.8	77.0	141.8	2.2	6.4	61.4

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.  
(Z) Less than \$50 thousand.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3442- --	METAL DOORS, SASH, AND TRIM, TOTAL.....		(X)	1,257.9	(X)	1,106.7
34421 --	Metal doors and frames (except storm doors).....		(X)	341.0	(X)	289.6
	Aluminum doors:					
	Industrial:					
34421 13	Overhead.....	1,000 units...	(NA)	39.3	12.2	3.7
34421 14	All other.....	..do.....			219.9	18.2
	Residential:					
34421 15	Garage.....	..do.....	e 27.6	2.5	192.9	9.6
34421 16	Sliding (glass, patio type).....	..do.....	e 688.6	41.4	553.9	32.1
34421 18	All other (excluding shower doors and tub enclosures).....	..do.....	(NA)	29.3	438.9	11.8
34421 19	Commercial and institutional (excluding shower doors and tub enclosures).....	..do.....	(NA)	45.2	154.7	13.4
	Iron and steel doors, including stainless steel doors:					
	Industrial:					
34421 21	Overhead.....	..do.....	(NA)	41.6	61.4	16.8
34421 22	All other.....	..do.....	(NA)	18.8	(NA)	28.3
	Residential:					
34421 23	Garage.....	..do.....	160.7	11.9	126.9	8.1
34421 29	All other (excluding shower doors and tub enclosures).....	..do.....	(NA)	5.0	183.4	5.2
	Commercial and institutional (excluding shower doors and tub enclosures).....					
34421 33	Overhead.....	..do.....	(NA)	7.4	e 731.3	43.4
34421 35	All other.....	..do.....	(NA)	23.2		
34421 39	Metal doors other than steel or aluminum.....	..do.....	(NA)	3.3	(NA)	5.3
	Metal doors frames, including trim sold as integral part of door frame:					
34421 42	Aluminum.....	..do.....	e 248.8	12.5	272.0	20.0
34421 44	Steel.....	..do.....	e 1,382.9	28.1	2,798.0	44.6
34421 45	Shower doors and tub enclosures.....	..do.....	(NA)	11.1	467.8	9.7
34421 00	Metal doors and door frames, n.s.k.....		(X)	20.4	(X)	19.4
34422 --	Metal window sash and frames (except storm sash).....		(X)	253.6	(X)	308.8
	Residential:					
	Steel:					
34422 12	Casement.....	1,000 units...	(NA)	21.6	(NA)	8.1
34422 19	All other.....	..do.....	502.5	3.9	(NA)	8.8
	Aluminum:					
34422 21	Single and double-hung.....	..do.....	e 3,561.6	40.2	4,223.9	58.7
34422 22	Awning.....	..do.....	(NA)	21.4	1,540.6	20.8
34422 23	Jalousie.....	..do.....	(NA)	26.9	(NA)	19.4
34422 24	Horizontal sliding.....	..do.....	e 2,589.9	38.3	(NA)	44.9
34422 29	All other.....	..do.....	(NA)	11.9	(NA)	18.8
34422 35	Other, including commercial, industrial, etc.: Steel.....	..do.....	408.3	15.5	(NA)	21.7
	Aluminum:					
34422 41	Single and double-hung.....	..do.....	(NA)	13.5	(NA)	24.4
34422 42	Awning.....	..do.....	(NA)	6.8	(NA)	8.5
34422 43	Projected.....	..do.....	(NA)	17.1	856.3	33.9
34422 49	All other.....	..do.....	(NA)	12.7	(NA)	18.8
34422 98	Metal window sash and frames, other than steel or aluminum....	..do.....	(X)	23.8	(NA)	0.5
34422 00	Metal doors, sash, and trim, n.s.k.....	..do.....			(X)	21.4
34423 --	Metal molding and trim and store fronts.....		(X)	135.9	(X)	116.8
	Metal molding and trim:					
34423 21	Steel.....	..do.....	(X)	40.6	(X)	32.1
34423 25	Aluminum.....	..do.....	(X)	79.3	(X)	71.4
34423 51	Metal store fronts, sold complete at factory.....	..do.....	(X)	6.0	(X)	6.7
34423 00	Metal molding and trim and store fronts, not specified by type.	..do.....	(X)	10.0	(X)	6.5

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
	METAL DOORS, SASH, AND TRIM--Continued					
34424 --	Metal combination screen and storm sash and doors.....	.....	(X)	195.1	(X)	221.4
34424 11	Metal storm sash.....	1,000 units...	(NA)	21.6	(NA)	9.2
	Metal combination screen and storm sash:					
34424 21	Steel.....	...do.....	(NA)	6.1	(NA)	5.4
34424 25	Aluminum.....	...do.....	<sup>e</sup> 11,536.2	113.8	<sup>e</sup> 10,745.8	106.0
	Metal combination screen and storm doors:					
34424 41	Steel.....	...do.....	(NA)	7.1	145.1	3.6
34424 45	Aluminum.....	...do.....	<sup>e</sup> 2,184.0	42.6	3,329.5	65.2
34424 00	Metal storm sash, combination screen and storm sash and doors and parts, n.s.k.....	.....	(X)	3.9	(X)	31.9
34425 --	Metal window and door screens (except combination), and metal weather strip.....	.....	(X)	58.4	(X)	56.7
34425 11	Screen doors, metal.....	1,000 units...	<sup>e</sup> 713.2	7.9	446.4	4.6
	Window screens, with metal frames including tension and roll types:					
34425 21	Steel.....	...do.....	(NA)	4.5	(NA)	3.0
34425 25	Aluminum.....	...do.....	<sup>e</sup> 12,145.7	27.6	<sup>e</sup> 14,240.7	28.9
34425 51	Weatherstrip, metal.....	million lin. ft.....	481.8	15.0	<sup>e</sup> 238.5	17.4
34425 00	Metal window and door screens, n.s.k.....	.....	(X)	3.4	(X)	2.8
34420 00	Metal doors, sash, and trim, n.s.k. (For establishments with 10 or more employees in 1967. See Note.).....	.....	(X)	237.9	}	113.5
34420 02	Metal doors, sash, and trim, n.s.k. (For establishments with fewer than 10 employees in 1967. See Note.).....	.....	(X)	36.0		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

<sup>e</sup>From 10 to 30 percent of this figure was estimated. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963		
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)	
	INDUSTRY 3442.--METAL DOORS, SASH, AND TRIM						
	Materials, containers, parts, and supplies, total.....		(x)	698.4	(x)	628.2	
	Mill shapes and forms (except castings):						
	Carbon steel:						
331009	Concrete reinforcing bars.....	1,000 short tons.	9.1	1.8	30.5	4.6	
331010	Bars and bar shapes (except concrete reinforcing bars).....	..do.....					
331012	Sheet and strip.....	..do.....		239.9	39.6	269.7	42.9
331013	Plates.....	..do.....		6.7	1.1	2.9	0.5
331015	Structural shapes.....	..do.....		12.9	2.3	21.7	3.5
331017	Wire and wire products.....	..do.....	5.0	1.7	2.2	0.7	
331019	All other carbon steel mill shapes and forms.....	..do.....	16.9	2.9	29.7	5.3	
	Alloy steel (except stainless):						
331021	Bar and bar shapes.....	..do.....	22.0	14.1	4.5	1.1	
331029	All other alloy steel mill shapes and forms.....	..do.....					
331031	Stainless steel.....	..do.....			7.6	7.8	
	Copper and copper-base alloy:						
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	0.5	0.3	0.3	0.2	
335127	Pipe and tube.....	..do.....	(1)	(1)			
335123	Plate, sheet, and strip, including military cups and discs...	..do.....	1.3	0.8			1.4
	Aluminum and aluminum-base alloy:						
335202	Sheet, plate, and foil <sup>2</sup> .....	..do.....	140.0	55.8	68.5	26.0	
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc. <sup>2</sup> .....	..do.....	289.0	115.9	334.5	128.0	
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	..do.....	14.4	7.1	52.3	19.6	
	Primary metals (ingot, pig, etc.):						
333401	Aluminum and aluminum-base alloy refinery shapes (ingot, slugs, billet, etc.).....	1,000 short tons.	96.4	49.8	87.1	38.8	
333348	Zinc and zinc-base alloy refinery shapes.....	..do.....	0.1	0.1	0.5	0.3	
	Scrap (excluding home scrap):						
999811	Iron and steel.....	..do.....	(D)	(D)	(D)	(D)	
999808	Aluminum and aluminum-base alloy.....	..do.....	(D)	(D)	7.0	2.7	
	Castings (rough and semifinished): <sup>2</sup>						
332011	Iron (gray and malleable).....	..do.....	2.6	1.3	1.2	0.6	
332300	Steel.....	..do.....	34.6	5.6	2.1	0.5	
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	23.8	10.7	7.3	3.4	
321101	Flat glass.....	..do.....	(X)	38.8	(X)	165.4	
970099	All other materials and components, parts, containers, and supplies consumed.....	..do.....	(X)	119.8			
973000	Materials, etc., n.s.k. <sup>3</sup> .....	..do.....	(X)	228.6			(X)

(D) Included with material code 970099 "All other materials, etc." to avoid disclosing the operations of individual companies. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Included with material code 970099 "All other materials and components, etc."

<sup>2</sup>No data are available on the quantities of aluminum sheet plate and foil, aluminum extruded shapes or castings produced and consumed in the same establishment.

<sup>3</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3442, these small establishments accounted for approximately 2 percent of payrolls and 2 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.

# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-34C-3

## INDUSTRY SERIES

### Fabricated platework (boiler shops)

SIC Code 3443

**preliminary  
report**

The Fabricated Platework (Boiler Shops) Industry includes establishments primarily engaged in manufacturing power and marine boilers, pressure and nonpressure tanks, processing and storage vessels, heat exchangers, weldments and similar products by the process of cutting, forming and joining metal plates, shapes, bars, sheet, pipe mill products and tubing to custom or standard design for factory or field assembly. Establishments primarily engaged in manufacturing nonelectric heating apparatus other than power boilers are classified in industry 3433, and household cooking apparatus in industry 3631.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Fabricated Platework (Boiler Shops) Industry amounted to \$2,603.5 million, an increase of 60 percent compared with 1963. Value added by manufacture at \$1,312.2 million in 1967 was 70 percent more than value added in 1963. Average employment in the industry showed an increase of 27 percent from 1963 to a total of 95.6 thousand employees in 1967.

Of the \$2,603.5 million total value of shipments and other receipts of establishments classified as fabricated platework (boiler shops), \$114.4 million were products primary to other industries; and \$240.3 million were receipts for miscellaneous activities. The industry shipments of primary products represented 95 percent of the total

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3443.--FABRICATED PLATEWORK (BOILER SHOPS)														
1967 Census....	1,468	787	95.6	696.3	72.6	150.1	475.3	1,312.2	1,301.5	2,603.5	83.1	513.9	95	86
1966 ASM <sup>1</sup> .....	(NA)	(NA)	90.9	631.7	67.5	139.8	419.9	1,181.2	1,188.3	2,323.3	62.1	464.7	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	84.1	559.2	62.5	129.0	375.5	1,006.7	1,037.7	2,000.2	45.5	419.5	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	76.2	497.9	56.4	116.6	334.4	847.6	901.2	1,744.4	39.2	337.4	(NA)	(NA)
1963 Census....	1,383	601	75.0	465.4	54.6	111.4	310.5	770.1	860.6	1,623.0	32.9	319.5	89	83
1962 ASM <sup>1</sup> .....	(NA)	(NA)	72.9	449.8	51.4	104.1	286.1	672.7	801.0	1,499.6	31.5	257.3	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	76.6	456.2	53.9	107.3	289.8	669.2	808.5	1,477.4	21.2	299.5	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	79.9	468.7	56.4	113.2	299.9	677.6	843.5	1,521.7	29.4	302.6	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	83.2	473.2	58.2	116.3	298.6	716.8	836.5	1,591.0	40.3	323.8	(NA)	(NA)
1958 Census <sup>2</sup> ....	1,252	557	90.6	497.1	64.7	127.2	323.2	755.0	878.4	1,670.0	45.0	363.5	89	83

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**

manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 89 percent in 1963.

The total value of fabricated platework shipped by all producers in 1967 was \$2,618.7 million of which \$2,248.8 million, or 86 percent, were shipped by plants classified in industry 3443, Fabricated Platework (Boiler Shops), while the remainder was shipped by plants classified in

other industries. This percent, called the coverage ratio, was 83 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

#### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3443, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Report series:

MA-34G, Steel Power Boilers

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3443--FABRICATED PLATEWORK (BOILER SHOPS)													
United States, total.....	1,468	787	95.6	696.3	72.6	150.1	475.3	1,312.2	1,301.5	2,603.5	83.1	75.0	770.1
New England.....	95	35	3.1	24.6	2.0	4.1	14.1	37.1	30.1	68.7	4.1	2.4	28.0
Massachusetts.....	54	22	1.7	12.4	1.3	2.6	8.2	21.4	15.0	35.7	(D)	1.8	22.1
Connecticut.....	24	8	0.9	9.1	0.4	0.8	3.8	10.8	10.3	22.8	2.3	0.4	5.0
Middle Atlantic.....	306	165	21.7	159.0	16.3	33.2	107.9	312.0	266.8	563.8	14.6	16.9	165.3
New York.....	97	44	5.1	38.6	3.8	7.8	26.0	74.8	64.7	134.8	6.0	3.8	43.7
New Jersey.....	71	33	2.5	19.4	1.8	3.7	11.9	37.6	31.0	67.0	1.1	2.3	23.2
Pennsylvania.....	138	88	14.1	101.0	10.7	21.6	69.9	199.6	171.1	362.0	7.6	10.8	98.4
East North Central....	353	200	23.5	173.4	17.6	35.9	117.9	311.4	301.0	609.3	20.6	20.8	208.1
Ohio.....	102	59	10.0	75.3	6.8	13.8	47.3	129.7	141.5	267.5	7.6	8.6	91.0
Indiana.....	44	24	3.0	20.1	2.5	4.9	15.4	32.4	41.7	75.0	(D)	2.4	21.7
Illinois.....	80	47	4.2	30.9	3.3	7.0	22.0	73.6	53.3	125.0	2.2	3.6	36.1
Michigan.....	80	37	2.7	22.1	2.2	4.5	15.6	36.6	34.0	73.5	(D)	1.7	18.8
Wisconsin.....	47	33	3.6	25.0	2.9	5.7	17.6	38.2	30.4	68.4	2.1	4.4	40.5
West North Central....	96	48	5.5	41.9	4.3	9.2	29.0	71.4	78.0	150.2	3.0	4.2	41.0
Minnesota.....	21	11	1.0	9.2	0.8	1.8	6.1	16.0	18.0	33.3	0.8	0.6	5.0
Iowa.....	18	7	0.6	3.3	0.4	0.9	2.2	4.6	6.0	10.8	0.2	0.9	9.7
Missouri.....	30	14	2.9	22.9	2.3	4.8	16.5	37.0	36.9	75.1	1.3	2.0	9.1
Kansas.....	15	11	0.7	4.5	0.5	1.2	3.1	7.9	8.3	16.2	0.5	0.3	2.4
South Atlantic.....	121	69	6.8	44.6	5.5	11.3	32.3	90.0	108.8	200.6	7.2	5.6	63.5
Delaware.....	7	4	0.4	4.4	0.3	0.9	3.4	6.9	8.8	17.9	(D)	0.3	6.9
Maryland.....	17	9	0.5	3.1	0.4	0.7	2.0	4.2	6.7	11.2	0.2	0.6	4.8
Virginia.....	14	11	1.5	11.6	1.1	2.3	6.8	16.8	29.7	46.5	3.4	1.2	14.8
North Carolina.....	20	10	1.3	6.2	1.1	2.1	5.9	29.2	22.7	51.0	1.6	1.2	8.9
South Carolina.....	9	4	0.3	1.8	0.2	0.4	1.2	3.0	5.1	8.1	(D)	0.2	2.0
Georgia.....	18	12	1.6	9.6	1.4	2.8	7.5	19.3	22.8	41.9	0.7	1.5	18.8
Florida.....	32	15	1.1	6.6	0.8	1.8	4.6	8.9	11.9	21.1	0.6	0.6	5.8
East South Central....	74	49	10.2	71.7	8.0	16.3	51.2	146.6	136.6	284.1	16.6	7.5	72.8
Alabama.....	22	15	1.7	11.9	1.5	3.0	9.3	54.3	27.4	81.1	(D)	1.7	21.4
Mississippi.....	9	8	1.5	9.4	1.4	2.9	8.1	30.7	20.0	46.6	(D)	(D)	(D)
West South Central....	186	113	15.5	106.4	12.2	26.8	76.0	197.2	245.9	447.4	9.9	9.4	105.8
Oklahoma.....	42	27	4.1	28.4	3.3	7.5	21.1	68.5	71.3	138.3	3.4	2.0	30.7
Texas.....	119	72	8.8	59.3	6.8	14.6	41.6	97.2	142.8	245.7	4.4	5.4	55.8
Mountain.....	37	22	1.8	12.3	1.3	2.6	8.3	32.6	29.2	61.2	0.7	1.9	18.9
New Mexico.....	4	2	0.1	0.7	0.1	0.2	0.4	1.2	1.5	2.7	(Z)	(D)	(D)
Nevada.....	10	8	0.8	5.8	0.7	1.3	4.3	22.8	16.1	38.7	0.3	(D)	(D)
Pacific.....	200	86	7.6	62.3	5.5	10.8	38.7	113.9	105.0	218.2	6.5	6.4	66.6
Washington.....	26	13	0.8	6.2	0.6	1.2	4.4	11.2	8.1	18.9	0.3	(D)	(D)
Oregon.....	18	9	1.0	8.6	0.8	1.6	5.9	9.2	15.0	25.2	0.8	0.5	5.6
California.....	154	64	5.8	47.5	4.1	8.0	28.3	93.5	81.8	173.9	5.4	5.6	57.5

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers				
			1967		1963		
			Quantity	Value (million dollars)	Quantity	Value (million dollars)	
3443- --	FABRICATED PLATEWORK (BOILER SHOP PRODUCTS), TOTAL.....		(X)	2,618.7	(X)	1,580.8	
34431 --	Heat exchangers and steam condensers.....		(X)	353.4	(X)	160.5	
34431 11	Heat exchangers, closed types, industrial: Bare tube.....	1,000 sq. ft. of heat trans- fer surface..	(NA)	252.3	(NA)	91.2	
34431 15	Fin tube.....	do.....	(NA)	46.4	(NA)	40.4	
34431 51	Steam condensers.....	1,000 sq. ft. of condensing surface.....	(NA)	38.8	(NA)	23.4	
34431 00	Heat exchangers and steam condensers, n.s.k.....		(X)	15.9	(X)	5.4	
34432 --	Fabricated steelplate, including stacks and weldments.....		(X)	515.8	(X)	374.2	
34432 31	Stacks (smoke or other).....	1,000 short tons.....	(NA)	23.3	(NA)	5.8	
34432 51	Weldments.....	do.....	(NA)	124.8	(NA)	61.5	
34432 11	Fabricated steelplate (factory assembled or formed and prepared for field erection): For large diameter pipe (over 36-inch diameter for pipelines, penstocks, tunnel linings, etc.).....	do.....	e411.1	138.6	210.2	70.6	
34432 98	Fabricated steelplate for other purposes.....	do.....	(NA)	207.4	(NA)	217.1	
34432 00	Fabricated steelplate, n.s.k.....		(X)	21.7	(X)	19.1	
34433 --	Steel power boilers, parts and attachments (over 15 p.s.i. steam working pressure).....		(X)	514.9	(X)	340.7	
	Stationary power boilers: <sup>1</sup> Water tube: Over 15 to 449 p.s.i. steam working pressure:						
34433 12	10,000 lbs./hr. and under.....	No. of units..	1,383.0	38.3	1,741.0	40.5	
34433 16	10,001 lbs./hr. to 100,000 lbs./hr.....	do.....					
34433 14	450 p.s.i. steam working pressure and over:						
34433 18	10,000 lbs./hr. and under.....	do.....	47.0	3.4			
34433 18	10,001 lbs. to 100,000 lbs./hr.....	do.....					
34433 21	100,001 lbs./hr. to 250,000 lbs./hr.: Over 15 to 449 p.s.i. steam working pressure.....	do.....	72.0	8.2	78.0	13.0	
34433 23	450 p.s.i. steam working pressure and over.....	do.....	110.0	24.8			
34433 31	250,000 lbs./hr. and over: Over 15 to 449 p.s.i. steam working pressure.....	do.....	149.0	347.4	104.0	151.1	
34433 33	450 p.s.i. steam working pressure and over.....	do.....					
34433 36	Fire tube: Horizontal return tabular.....	do.....	1,320.0	5.5	1,535.0	4.5	
34433 37	Scotch type: Steam pressure type.....	do.....	3,560.0	31.0	4,317.0	25.1	
34433 38	Hot water type.....	do.....	543.0	1.1			
34433 39	Other types.....	do.....	924.0	2.4	1,558.0	2.0	
34433 41	Marine boilers.....	do.....	(X)	47.5	(X)	103.2	
34433 52	Parts and attachments for steel power boilers (sold separately).	do.....					
34433 00	Steel power boilers, parts and attachments (over 15 p.s.i. steam working pressure), n.s.k.....		(X)	5.3	(X)	1.2	
34434 --	Gas cylinders.....		(X)	72.0	(X)	46.3	
34434 11	For liquefied petroleum gas.....	1,000.....	(NA)	20.6	314.1	10.8	
34434 19	Other gas cylinders.....	do.....	(NA)	51.2	1,002.8	33.3	
34434 00	Gas cylinders, n.s.k.....		(X)	0.2	(X)	2.3	
34435 --	Metal tanks, complete at factory (standard line, pressure).....		(X)	123.3	(X)	104.4	
34435 12	Truck tanks for delivery of liquefied petroleum gas (butane, propane, etc.).....		(NA)	6.6	(NA)	8.2	
	All other liquefied petroleum gas tanks (under 3,000 gallon capacity):						
34435 22	Carbon steel.....	1,000 units...	170.6	26.0	226.8	34.5	
34435 24	Alloy and stainless steel.....	do.....	(NA)	9.3	(NA)	4.1	
34435 26	Aluminum.....	do.....	(NA)	2.0			
34435 35	Air receivers.....	do.....	(NA)	5.0	(NA)	7.3	

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3443- --	FABRICATED PLATEWORK (BOILER SHOP PRODUCTS)--Continued					
34435 --	Metal tanks, complete at factory (standard line, pressure)--Con.					
34435 38	Other pressure tanks, including anhydrous ammonia under 3,000 gallon capacity (excluding range boilers, expansion tanks, hot-water storage tanks, and tanks for water heaters sold separately).....		(X)	60.1	(X)	36.5
34435 00	Metal tanks, complete at factory (standard line, pressure), n.s.k.....		(X)	14.3	(X)	13.9
34437 --	Metal tanks, complete at factory (standard line, nonpressure)....		(X)	177.1	(X)	145.6
	Nonpressure storage tanks:					
	Bulk storage, including above ground, underground and inside storage tanks:					
	Carbon steel:					
34437 11	6,000 gallon or less capacity.....	1,000.....	<sup>e</sup> 186.8	38.5	236.6	39.7
34437 13	Over 6,000 gallon capacity.....	...do.....	39.7	35.1	29.1	29.6
	Alloy, including stainless steel, nickel, etc. (excluding aluminum):					
34437 14	Dairy processing plant storage tanks for milk (stainless steel).....	...do.....	(NA)	17.5	6.3	12.6
34437 16	Other.....	...do.....	23.9	10.7	(NA)	9.2
34437 18	Aluminum.....	...do.....	(NA)	2.5	1.1	2.1
34437 21	Basement oil storage tanks.....	...do.....	164.3	5.2	198.9	5.8
34437 25	Oilfield bolted.....	...do.....	<sup>e</sup> 2.4	6.4	1.4	2.8
34437 27	Farm storage tanks, with or without supports.....	...do.....	(NA)	12.1	(NA)	4.5
	Truck tanks (for delivery of fluids, except trailer tanks) excluding fuel supply tanks for motor vehicles (gas tanks):					
34437 43	For liquid fuels (excluding liquefied petroleum gas tanks).....	1,000.....	5.9	15.9	3.1	8.5
34437 45	For other fluids.....	...do.....	(NA)	4.6	(NA)	4.5
34437 71	Septic tanks, metal.....	...do.....	76.5	3.7	<sup>e</sup> 94.4	4.9
34437 98	Other nonpressure tanks (including tanks for trailers).....	...do.....	(X)	14.7	(NA)	15.3
34437 00	Metal tanks, complete at factory (standard line, non-pressure), n.s.k.....	...do.....	(X)	10.2	(X)	6.1
34438 --	Metal tanks and vessels, custom fabricated at the factory.....	...do.....	(X)	464.3	(X)	197.1
	Pressure vessels and tanks (over 24-inch outside diameter and not less than 5 cu. ft. capacity) including process vessels, tanks and kettles for refineries, chemical plants, papermills and other processing industries (except tanks for liquefied petroleum gas):					
	Carbon steel:					
34438 03	3/4-inch wall thickness and under.....	1,000 short tons.....	<sup>e</sup> 179.3	105.3	123.5	58.7
34438 05	Over 3/4-inch wall thickness.....	...do.....	(NA)	138.5	(NA)	28.6
34438 06	Alloy and stainless steel, nickel, etc. (excluding aluminum).....	...do.....	33.2	51.8	19.5	31.0
34438 08	Aluminum.....	...do.....	8.1	23.0	2.5	5.9
34438 15	Liquefied petroleum gas tanks, 3,000 gallon capacity and over.....	...do.....	(NA)	17.1	33.8	21.3
34438 18	All other tanks and vessels, custom fabricated at the factory, (including anhydrous ammonia tanks 3,000 gallon capacity and over).....	...do.....	(X)	120.5	(X)	49.9
34438 00	Metal tanks and vessels, custom fabricated at the factory, n.s.k.....	...do.....	(X)	8.1	(X)	1.6
34439 --	Metal tanks and vessels, custom fabricated and field erected.....	...do.....	(X)	175.7	(X)	123.3
	Bulk storage tanks:					
	Water:					
34439 22	Elevated types.....	...do.....	(NA)	28.6	(NA)	42.8
34439 24	Other types.....	...do.....	(NA)	17.5		
34439 26	Petroleum and petroleum products.....	1,000 short tons.....	138.6	37.9	168.4	51.1
34439 33	Other.....	...do.....	(NA)	30.9	(NA)	8.9

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963--Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3443- --	FABRICATED PLATEWORK (BOILER SHOP PRODUCTS)--Continued					
34439 --	Metal tanks and vessels, custom fabricated and field erected--Con.					
	Pressure vessels and tanks, including process vessels, tanks, and kettles for refineries, chemical plants, papermills, and other processing industries:					
	Carbon steel, including gas holders:					
34439 53	3/4-inch wall thickness and under.....	1,000 short tons.....	(NA)	28.8	24.1	11.7
34439 55	Over 3/4-inch wall thickness.....	...do.....	(NA)	9.5	14.8	4.6
34439 59	Alloy, including stainless steel, nickel, aluminum, etc.....	...do.....	(NA)	15.7	0.6	1.7
34439 00	Metal tanks and vessels, custom fabricated and field erected, n.s.k.....		(X)	6.8	(X)	2.4
34430 00	Boiler shop products, n.s.k. (For establishments with 10 or more employees. See Note.).....		(X)	207.2	}	88.6
34430 02	Boiler shop products, n.s.k. (For establishments with less than 10 employees. See Note.).....		(X)	15.0		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

<sup>6</sup>From 10 to 30 percent of this figure was estimated. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Data differ from those data published in Current Industrial Reports Series MA-34G, "Steel Power Boilers" because:

- In survey MA-34G the data represent new orders, whereas census of manufactures data represent shipments.
- In survey MA-34G the data relate to boilers of 100 square feet of heating surface and over, whereas census of manufactures includes those of under 100 square feet of heating surface.



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3443.--FABRICATED PLATEWORK (BOILER SHOPS)					
	Materials, containers, parts, and supplies, total.....		(X)	1,188.8	(X)	755.3
	Mill shapes and forms (except castings):					
	Carbon steel:					
331009	Concrete reinforcing bars.....	1,000 short tons..	13.5	3.4	6.0	0.8
331010	Bars and bar shapes (except concrete reinforcing bars).....	..do.....	91.9	15.6	67.2	11.4
331012	Sheet and strip.....	..do.....	458.6	70.8	377.3	56.6
331013	Plates.....	..do.....	1,639.6	247.3	1,500.8	215.8
331015	Structural shapes.....	..do.....	176.5	29.0	165.3	24.8
331017	Wire and wire products.....	..do.....	9.7	2.9	11.8	2.3
331019	All other carbon steel mill shapes and forms.....	..do.....	1292.5	185.0	149.8	43.1
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	..do.....	26.8	10.0	4.7	1.7
331029	All other alloy steel mill shapes and forms.....	..do.....	127.1	59.1	105.7	38.1
331031	Stainless steel.....	..do.....	37.3	46.2	22.8	33.0
	Copper and copper-base alloy:					
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	2.9	3.5	0.5	0.3
335123	Plate, sheet, and strip, including military cups and discs..	..do.....	7.0	5.7	4.9	3.9
335127	Pipe and tube.....	..do.....	(2)	(2)	16.0	8.7
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	..do.....	22.3	12.3	18.7	10.4
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	..do.....	4.4	2.5	2.0	1.1
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	..do.....	(NA)	0.5	2.6	1.1
	Scrap (excluding home scrap):					
999811	Iron and steel.....	..do.....	95.5	3.5	32.3	1.3
	Castings (rough and semifinished): <sup>3</sup>					
332011	Iron (gray and malleable).....	..do.....	(D)	(D)	7.4	2.7
332300	Steel.....	..do.....	(NA)	23.7	8.9	5.8
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	3.5	2.1	(NA)	0.3
321101	Flat glass.....	..do.....	(X)	1.6	(NA)	(NA)
970099	All other materials and components, parts, containers, and supplies consumed <sup>4</sup> .....	..do.....	(X)	335.7	(X)	217.0
976000	Materials, etc., n.s.k.....	..do.....	(X)	228.9	(X)	75.6

(D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or from related figures. (NA) Not available. n.s.k. Not specified by kind.  
(X) Not applicable.

<sup>1</sup>These figures are understated by \$10 million or less due to apparent under coverage of carbon steel pipe and tube.

<sup>2</sup>Included with material code 970099, "All other materials and components, parts, containers and supplies consumed."

<sup>3</sup>No data are available for the quantities of castings produced and consumed in the same establishment.

<sup>4</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3443, these small establishments accounted for approximately 0.6 percent of payrolls and 0.6 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



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# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

### Sheet metalwork

SIC Code 3444

**preliminary  
report**

The Sheet Metalwork Industry includes establishments primarily engaged in manufacturing sheet metalwork for buildings (not including fabrication work done by construction contractors at the place of construction), and manufacturing sheet metal stovepipes, light tanks, etc.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Sheet Metalwork Industry amounted to \$1,830.4 million, an increase of 40 percent compared with 1963. Value added by manufacture at \$897.1 million in 1967 was 42 percent more

than value added in 1963. Average employment in the industry showed an increase of 12 percent from 1963 to a total of 68.9 thousand employees in 1967.

Of the \$1,830.4 million total value of shipments and other receipts of establishments classified as sheet metalwork establishments, \$207.4 million were products primary to other industries; and \$201.0 million were receipts for miscellaneous activities. The industry shipments of primary products represented 87 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 88 percent in 1963.

The total value of sheet metal products shipped by all producers in 1967 was \$1,678.6 million of

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3444.--SHEET METALWORK														
1967 Census....	3,058	812	68.9	494.8	53.6	106.7	337.7	897.1	936.7	1,830.4	45.6	261.2	87	85
1966 ASM <sup>1</sup> .....	(NA)	(NA)	71.9	501.8	56.3	115.3	349.0	883.1	950.5	1,834.8	40.7	268.3	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	66.4	428.9	52.0	109.0	299.9	753.5	839.3	1,577.9	33.8	224.6	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	62.9	395.3	48.7	101.2	278.4	693.2	702.1	1,385.4	28.6	197.5	(NA)	(NA)
1963 Census....	3,250	755	61.7	373.3	48.0	97.1	264.7	632.4	669.8	1,303.7	26.2	189.1	88	78
1962 ASM <sup>1</sup> .....	(NA)	(NA)	64.4	382.7	49.2	103.7	263.1	615.2	669.1	1,280.5	31.7	178.9	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	62.6	354.8	47.5	99.5	240.0	581.1	629.0	1,203.8	24.1	177.4	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	61.2	342.8	46.2	97.6	231.6	569.4	615.4	1,179.8	25.7	166.8	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	61.6	334.3	47.1	97.2	228.6	584.1	616.8	1,195.0	*22.5	161.1	(NA)	(NA)
1958 Census <sup>2</sup> ...	3,158	698	58.8	307.9	44.4	86.1	210.9	516.1	567.6	1,077.8	22.3	148.4	88	82

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 2 and 2, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued December 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**

which \$1,422.0 million, or 85 percent, were shipped by plants classified in industry 3444, Sheet Metalwork, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 78 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1,

2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3444.--SHEET METALWORK												
United States, total.....	3,058	812	68.9	494.8	53.6	106.7	337.7	897.1	936.7	1,830.4	45.6	61.7	632.4
New England.....	264	70	5.0	35.4	4.0	7.9	24.5	59.8	40.1	98.6	3.3	4.1	37.2
Maine.....	11	2	0.2	0.9	0.1	0.2	0.7	1.3	1.2	2.5	(Z)	(D)	(D)
Massachusetts.....	146	42	2.8	20.8	2.2	4.4	14.6	34.9	23.9	57.4	1.7	2.8	25.8
Rhode Island.....	25	5	0.2	1.8	0.2	0.4	1.4	2.6	1.6	4.2	0.1	0.2	1.9
Connecticut.....	63	17	1.5	10.2	1.2	2.4	6.7	17.6	11.0	28.7	1.3	0.8	7.6
Middle Atlantic.....	606	187	15.3	113.5	12.1	23.9	78.6	205.1	154.2	356.4	10.5	14.6	149.4
New York.....	251	76	6.5	48.5	5.2	10.6	35.6	78.1	49.0	126.2	3.3	6.3	64.3
New Jersey.....	191	61	4.1	31.0	3.3	6.8	22.0	51.1	44.3	94.7	1.8	3.2	33.7
Pennsylvania.....	164	52	4.7	34.0	3.5	6.5	21.1	75.8	61.0	135.5	5.5	5.0	51.3
East North Central....	598	199	19.7	145.8	15.1	30.6	97.8	272.8	334.6	605.7	16.3	17.5	186.6
Ohio.....	179	63	7.2	53.6	5.5	11.3	35.9	93.1	142.2	233.9	7.7	5.5	64.7
Indiana.....	68	30	2.1	13.9	1.6	3.3	9.2	28.2	38.0	65.9	(D)	1.7	16.6
Illinois.....	164	47	3.8	27.0	3.0	5.9	18.9	46.1	49.3	95.7	3.0	3.7	36.9
Michigan.....	122	39	3.1	24.6	2.4	4.8	17.1	50.4	47.3	96.0	(D)	3.5	39.5
Wisconsin.....	65	20	3.6	26.9	2.5	5.4	16.8	55.1	57.8	114.1	2.4	3.1	29.0
West North Central....	173	51	6.2	42.5	4.5	9.0	27.4	73.4	102.9	180.7	6.2	5.7	61.1
Minnesota.....	48	12	0.9	5.9	0.7	1.3	4.0	11.5	10.4	22.1	0.7	0.9	7.6
Iowa.....	23	19	1.3	9.3	4.9	1.9	5.9	12.5	12.4	25.0	0.2	1.1	10.7
Missouri.....	56	15	2.6	18.4	1.8	3.7	11.7	34.1	54.9	58.6	0.7	2.3	26.1
Nebraska.....	16	8	0.9	5.3	0.6	1.1	2.6	8.7	14.9	24.5	1.0	0.8	9.6
Kansas.....	22	8	0.4	2.5	0.4	0.7	1.7	4.7	6.8	12.0	0.6	0.3	5.0
South Atlantic.....	353	92	6.6	43.0	5.3	10.4	30.3	78.1	97.2	174.1	3.4	5.9	53.1
Virginia.....	43	13	1.1	9.5	0.9	1.8	5.5	16.0	16.1	31.3	0.5	0.7	6.1
South Carolina.....	24	4	0.2	1.0	0.2	0.3	0.7	2.1	4.5	3.5	0.1	(D)	(D)
Georgia.....	55	12	0.9	5.4	0.7	1.4	3.6	8.4	10.8	19.3	0.3	0.9	7.8
Florida.....	123	29	1.8	11.3	1.6	2.7	7.8	20.8	20.1	40.6	0.8	1.4	12.2
East South Central....	145	30	2.7	17.4	2.2	4.3	11.6	35.1	36.3	71.7	2.2	1.6	15.2
Kentucky.....	23	9	0.7	5.3	0.6	1.2	4.0	10.3	10.8	21.1	(D)	0.3	3.3
Tennessee.....	55	12	1.4	8.4	1.1	2.1	5.1	16.2	16.3	33.1	(D)	0.7	6.3
Alabama.....	42	7	0.5	2.8	0.4	0.8	1.8	6.6	9.4	13.8	0.2	0.4	4.0
Mississippi.....	25	2	0.1	0.9	0.1	0.2	0.6	2.0	1.8	3.8	0.1	0.2	1.6
West South Central....	322	56	3.8	23.3	3.1	6.1	16.8	38.7	41.1	79.8	1.4	3.2	25.1
Arkansas.....	35	6	0.4	2.6	0.3	0.7	1.8	3.3	4.5	7.8	0.1	0.2	0.8
Louisiana.....	51	8	0.4	2.5	0.3	0.6	1.7	4.9	7.0	11.9	0.2	0.6	4.8
Oklahoma.....	38	5	0.3	1.8	0.3	0.5	1.7	3.7	4.4	7.9	0.1	0.5	4.0
Texas.....	198	37	2.7	16.4	2.2	4.4	12.1	26.9	25.2	52.2	1.0	2.0	15.5
Mountain.....	96	13	1.0	6.4	0.8	1.6	4.8	11.6	12.9	24.3	0.8	1.0	11.5
Idaho.....	7	1	0.1	0.5	0.1	0.1	0.4	0.7	0.5	1.3	(Z)	(D)	(D)
Colorado.....	26	2	0.3	2.0	0.2	0.5	1.5	2.9	3.0	5.9	0.2	0.3	3.0
Arizona.....	35	6	0.3	1.9	0.3	0.5	1.4	3.0	3.3	6.3	0.4	0.2	2.3
Utah.....	16	2	0.1	1.0	0.1	0.2	0.7	2.3	2.6	4.8	0.1	0.2	2.7
Pacific.....	501	112	8.6	67.4	6.6	12.8	46.9	122.5	117.3	239.0	4.6	8.1	93.2
Washington.....	49	11	4.7	5.4	0.6	1.1	4.1	9.8	9.3	19.0	(D)	0.8	9.4
Oregon.....	45	9	0.8	6.3	0.6	1.2	4.9	10.5	12.7	23.7	(D)	0.7	6.9
California.....	397	91	6.0	54.7	5.3	10.3	37.2	100.4	94.9	194.1	4.0	6.5	76.4

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3444- --	SHEET METALWORK, TOTAL.....	.....	(X)	1,678.6	(X)	1,324.7
34441 --	Sheet metal roofing and siding and roof drainage equipment.....	.....	(X)	399.6	(X)	306.2
34441 05	Fabricated metal flooring.....	1,000 s. tons..	<sup>e</sup> 121.6	33.1	(NA)	(NA)
	Metal roofing:					
34441 11	Steel, all types.....	...do.....	<sup>1</sup> 742.4	<sup>1</sup> 182.7	579.2	133.7
34441 13	Aluminum, all types.....	...do.....	48.4	36.4	18.1	16.5
34441 15	Other metals, all types.....	...do.....	(NA)	<sup>2</sup> 3.2	(NA)	<sup>2</sup> 2.8
	Metal siding:					
34441 16	Steel.....	...do.....	( <sup>1</sup> )	( <sup>1</sup> )	20.3	6.5
	Aluminum:					
34441 17	Residential.....	...do.....	(NA)	85.8	97.8	93.7
34441 18	Other (commercial, industrial, farm buildings, etc.).....	...do.....	7.8	11.1	(X)	5.2
34441 19	Other metals.....	...do.....	(NA)	( <sup>2</sup> )	(NA)	( <sup>2</sup> )
	Roof drainage equipment, including eave troughs, etc.:					
34441 23	Steel.....	...do.....	(NA)	24.7	80.3	25.2
34442 27	Copper.....	...do.....	(NA)	2.6	1.8	2.4
34441 29	Aluminum.....	...do.....	(NA)	6.0	(NA)	6.1
34441 00	Sheetmetal roofing and siding and roof drainage equipment, n.s.k.....	.....	(X)	14.0	(X)	14.0
34442 --	Culverts, flumes, irrigation pipes.....	.....	(X)	169.9	(X)	137.5
34442 13	Steel.....	.....	(X)	145.8	(X)	122.4
34442 15	Aluminum.....	.....	(X)	18.7	(X)	4.6
34442 19	Other metal.....	.....	(X)	1.6	(X)	6.7
34442 00	Culverts, flumes, irrigation pipes, n.s.k.....	.....	(X)	3.8	(X)	3.8
34443 --	Other sheet metalwork.....	.....	(X)	719.9	(X)	731.8
34443 11	Cornices, skylights, ceiling, domes, copings and gravel stops...	.....	(X)	11.3	(X)	14.8
34443 15	Roof ventilators.....	.....	(X)	25.2	(X)	13.8
	Bins and vats:					
34443 21	Grain, excluding drum floors, fans, heaters, etc.....	.....	(X)	25.4	(X)	27.0
34443 25	Other, including feed storage.....	.....	(X)	14.9	(X)	13.4
	Other sheet metal products:					
34443 32	Stove pipe and furnace smoke pipe, elbows, ducts:					
34443 34	Aluminum.....	.....	(X)	48.7	(X)	26.6
	Steel.....	.....	(X)	54.8	(X)	66.3
	Air conditioning ducts, including dust collecting ducts:					
34443 36	Aluminum.....	.....	(X)	20.9	(X)	25.4
34443 37	Steel.....	.....	(X)	56.5	(X)	68.9
	Restaurant, hotel, and kitchen sheet metal equipment such as table tops, drainboard tops, etc.:					
34443 42	Aluminum.....	.....	(X)	14.9	(X)	20.9
34443 44	Steel.....	.....	(X)	37.9	(X)	26.1
	Metal awning and canopies, carports and patio roofs, assembled or unassembled prefabricated types:					
34443 46	Aluminum.....	.....	(X)	34.0	(X)	36.5
34443 47	Steel.....	.....	(X)	13.8	(X)	6.0
34443 51	Soffits, fascia, and shutters, aluminum.....	.....	(X)	11.1	(NA)	(NA)
	Other sheet metalwork (except cornices, skylights, ceiling domes, copings, gravel stops, roof ventilators, bins, and vats):					
34443 62	Steel.....	.....	(X)	200.4	(X)	176.7
34443 64	Aluminum.....	.....	(X)	50.4	(X)	52.2
34443 98	Other sheet metalwork of metals other than steel or aluminum..	.....	(X)	21.5	(X)	81.2
34443 00	Other sheet metalwork, n.s.k.....	.....	(X)	78.2	(X)	75.8

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3444- --	SHEET METALWORK, TOTAL--Continued					
34440 00	Sheet metalwork, n.s.k. (Represents primarily establishments with 10 or more employees in 1967. See Note.).....	.....	(X)	324.2	} (X)	149.2
34440 02	Sheet metal work, n.s.k. (Represents primarily establishments with less than 10 employees in 1967. See Note.).....	.....	(X)	65.0		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

<sup>e</sup>From 10 to 30 percent of this figure was estimated. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Steel siding, product code 3444416 is included with steel roofing, all types, product code 3444111.

<sup>2</sup>Metal siding of other than steel or aluminum, product code 3444119, is included with metal roofing of other than steel or aluminum, product code 3444115.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963		
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)	
	INDUSTRY 3444.--SHEET METALWORK						
	Materials, containers, parts, and supplies, total.....		(X)	787.9	(X)	562.4	
	Mill shapes and forms (except casting):						
	Carbon steel:						
331009	Concrete reinforcing bars.....	1,000 s. tons....	27.1	4.9	{	1.6	0.3
331010	Bars and bar shapes (except concrete reinforcing bars).....	..do.....				36.6	6.5
331012	Sheet and strip.....	..do.....				1,077.9	185.0
331013	Plates.....	..do.....	62.8	9.8	{	84.0	11.9
331015	Structural shapes.....	..do.....	42.4	6.8		35.0	5.9
331017	Wire and wire products.....	..do.....	52.6	10.4		2.6	0.8
331019	All other carbon steel mill shapes and forms.....	..do.....			16.5	3.6	
	Alloy steel (except stainless):						
331021	Bars and bar shapes.....	..do.....	29.0	20.8	{	1.0	0.3
331029	All other alloy steel mill shapes and forms.....	..do.....				28.5	6.1
331031	Stainless steel.....	..do.....				14.4	18.6
	Copper and copper-base alloy:						
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	(NA)	1.0	{	0.3	0.1
335123	Plate, sheet, and strip, including military cups and discs...	..do.....	(NA)	3.9		13.2	6.8
335127	Pipe and tube.....	..do.....	(Z)	(2)		1.9	0.8
	Aluminum and aluminum base-alloy:						
335202	Sheet, plate, and foil.....	..do.....	223.8	81.4	{	119.0	58.5
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	..do.....	32.9	14.7		19.2	8.5
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	..do.....				40.8	16.8
	Primary metals:						
333401	Aluminum and aluminum-base alloy refinery shapes (ingot, sluge, billet, etc.).....	1,000 s. tons....	(3)	(3)	{	1.2	0.6
333348	Zinc and zinc-base alloy refinery shapes.....	..do.....	(3)	(3)		2.9	0.7
	Scrap (excluding home scrap):						
999811	Iron and steel.....	..do.....	(3)	(3)	{	(3)	(3)
999808	Aluminum and aluminum-base alloy.....	..do.....	(3)	(3)		(3)	(3)
	Castings (rough and semifinished):						
332011	Iron (gray and malleable).....	..do.....	(NA)	0.9	{	1.1	0.9
332300	Steel.....	..do.....	(NA)	11.6		0.7	0.2
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	(NA)	4.1		0.5	0.4
321101	Flat glass.....	Million sq. feet.	(NA)	2.7	(NA)	(NA)	
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	173.0	(X)		106.2
973000	Materials, etc., n.s.k. <sup>4</sup> .....		(X)	209.9	(X)		122.7

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>These figures are understated by \$5 million or less because of apparent undercoverage of carbon steel pipe and tube.<sup>2</sup>Included with material code 970099, "All other materials and components, parts, containers, and supplies consumed."<sup>3</sup>Included with material code 970099, "All other materials and components, parts, containers, and supplies consumed," to avoid disclosing figures for individual companies.<sup>4</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3444, these small establishments accounted for approximately 3 percent of payrolls and 4 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



## Appendix

### EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



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# 1967 CENSUS OF MANUFACTURES



MC67(P)-34C-5

## INDUSTRY SERIES

### Architectural metalwork

**preliminary  
report**

SIC Code 3446

The Architectural and Ornamental Metalwork Industry includes establishments primarily engaged in manufacturing architectural and ornamental metalwork of ferrous and nonferrous metals, such as stairs and staircases, open steel flooring (grating), fire escapes, grilles, railings, and fences and gates, except those made from wire. Establishments primarily engaged in manufacturing prefabricated and portable metal buildings and parts, and miscellaneous metalwork, are classified in industry 3449.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classi-

fied in the Architectural Metalwork Industry amounted to \$391.9 million, an increase of 46 percent compared with 1963. Value added by manufacture at \$213.5 million in 1967 was 44 percent more than valued added in 1963. Average employment in the industry showed an increase of 11 percent from 1963 to a total of 17.3 thousand employees in 1967.

Of the \$391.9 million total value of shipments and other receipts of establishments classified as architectural metalwork, \$45 million were products primary to other industries; and \$18 million were receipts for miscellaneous activities. The industry shipments of primary products represented 88 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 86 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)
<b>INDUSTRY 3446.--ARCHITECTURAL METALWORK</b>														
1967 Census....	1,374	195	17.3	110.7	13.7	26.2	72.1	213.5	180.3	391.9	6.5	50.5	88	78
1966 ASM <sup>1</sup> .....	(NA)	(NA)	17.5	107.7	13.8	28.0	76.5	191.9	153.3	342.0	*8.9	37.6	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	16.9	99.7	13.1	27.8	69.5	172.3	145.5	313.1	*7.7	39.9	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	14.8	86.4	11.8	23.5	61.3	156.1	135.6	292.1	*8.5	54.0	(NA)	(NA)
1963 Census....	1,334	173	15.6	87.0	12.5	24.2	60.6	148.8	119.3	269.3	6.1	39.4	86	71
1962 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1958 Census <sup>2</sup> ...	1,343	(NA)	21.0	111.0	16.0	31.6	74.2	180.9	145.1	322.4	6.5	(NA)	(NA)	(NA)

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 2 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued September 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**BUREAU OF THE CENSUS George Hay Brown, Director**

The total value of architectural metalwork shipped by all producers in 1967 was \$424.5 million of which \$329 million, or 78 percent, were shipped by plants classified in industry 3446, Architectural Metalwork, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 71 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)						
INDUSTRY 3446---ARCHITECTURAL METALWORK													
United States, total.....	1,374	195	17.3	110.7	13.7	26.2	72.1	213.5	180.3	391.9	6.5	15.6	148.8
New England.....	68	4	0.4	2.8	0.3	0.5	1.6	5.9	4.2	9.9	0.1	0.8	8.9
Massachusetts.....	31	2	0.2	1.9	0.2	0.3	0.9	3.1	1.8	4.8	(Z)	0.2	2.0
Middle Atlantic.....	402	51	4.0	25.7	3.2	6.1	17.1	45.6	38.9	84.2	1.1	4.6	44.9
New York.....	177	25	2.0	12.0	1.6	3.0	8.1	20.8	16.6	37.3	0.5	2.0	20.8
New Jersey.....	83	6	0.6	4.2	0.4	0.9	2.7	8.9	6.3	15.3	0.2	0.5	5.9
Pennsylvania.....	142	20	1.5	9.4	1.2	2.2	6.4	15.9	15.9	31.6	0.4	2.1	18.2
East North Central...	232	43	4.5	31.8	3.5	6.8	20.7	61.8	60.9	122.0	2.5	3.2	34.0
Ohio.....	67	14	2.1	14.2	1.7	3.2	10.4	27.5	32.0	59.0	1.1	1.2	13.3
Indiana.....	22	2	0.2	1.1	0.2	0.3	0.8	2.5	2.4	4.9	(D)	0.3	3.2
Illinois.....	75	12	1.0	7.4	0.8	1.6	4.3	14.4	15.0	29.3	0.4	0.9	8.2
Michigan.....	43	10	0.8	6.0	0.6	1.1	3.5	11.1	7.5	18.4	(D)	0.5	6.1
Wisconsin.....	25	5	0.4	3.1	0.3	0.5	1.6	6.2	4.0	10.3	0.2	0.3	3.2
West North Central...	78	13	0.9	5.7	0.7	1.3	3.6	11.0	6.7	17.7	0.2	0.7	6.7
Minnesota.....	22	5	0.3	1.9	0.2	0.4	1.3	2.8	1.9	4.7	0.1	0.3	2.2
Iowa.....	11	2	0.1	0.8	0.1	0.2	0.5	1.9	1.0	2.9	(Z)	(D)	(D)
Missouri.....	21	3	0.2	1.6	0.2	0.4	1.1	2.6	1.7	4.3	(Z)	0.3	2.8
South Atlantic.....	202	33	2.7	15.5	2.1	4.1	9.4	27.1	20.2	47.1	1.1	1.8	14.6
Maryland.....	35	8	0.7	4.5	0.5	1.0	2.6	7.4	5.1	12.3	0.1	0.4	4.4
North Carolina.....	22	2	0.1	1.1	0.1	0.2	0.7	1.3	1.6	2.9	0.1	(D)	(D)
South Carolina.....	16	4	0.2	1.0	0.2	0.4	0.8	2.1	1.3	3.4	0.2	0.1	0.8
Georgia.....	28	4	0.3	1.5	0.2	0.5	1.0	3.4	2.6	5.9	0.1	0.1	1.4
Florida.....	63	8	1.0	4.7	0.7	1.4	2.9	8.7	5.6	14.5	0.4	0.3	2.6
East South Central...	87	16	1.5	7.7	1.2	2.1	5.0	17.8	19.6	37.1	0.4	0.7	4.9
Alabama.....	24	6	0.6	2.4	0.5	0.8	1.9	7.4	9.8	17.3	0.2	0.2	0.8
West South Central...	103	9	0.9	5.1	0.7	1.5	3.3	10.9	8.0	18.7	0.2	0.9	8.6
Texas.....	67	5	0.6	3.2	0.5	1.0	2.0	7.5	5.7	13.1	0.2	0.7	6.1
Mountain.....	46	5	1.0	6.2	0.9	1.7	4.7	11.4	8.5	20.4	0.5	0.9	7.6
Arizona.....	11	3	0.7	3.9	0.5	1.1	2.9	6.7	5.1	12.2	(D)	(D)	(D)
Pacific.....	156	21	1.4	10.3	1.1	2.1	6.6	21.9	13.3	34.7	0.5	1.9	18.5
Washington.....	21	2	0.1	0.7	0.1	0.2	0.6	1.5	1.0	2.5	(Z)	(D)	(D)
California.....	121	18	1.2	9.2	1.0	1.8	5.8	19.7	11.9	31.2	0.4	1.7	17.1

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3446- --	ARCHITECTURAL METALWORK.....	.....	(X)	424.5	(X)	306.2
	Architectural and ornamental metalwork (except curtain wall and other exterior panels):					
3446 11	Grilles, all types (including open mesh partitions and guards):					
	Iron and steel.....	1,000 short tons.....	<sup>e</sup> 59.1	35.0	(NA)	27.1
3446 16	Aluminum.....	.....do.....	(NA)	19.3	<sup>e</sup> 5.1	10.9
	Fences and gates, other than wire:					
3446 21	Iron and steel.....	.....do.....	(NA)	5.9	(NA)	6.4
3446 26	Aluminum.....	.....do.....	<sup>e</sup> 0.7	1.5	(NA)	2.6
	Stairs, staircases, fire escapes, and railings:					
3446 31	Iron and steel.....	.....do.....	<sup>e</sup> 112.7	64.2	137.4	70.7
3446 36	Aluminum.....	.....do.....	(NA)	21.4	(NA)	13.0
	Open flooring and grating for building construction:					
3446 41	Iron and steel.....	.....do.....	<sup>e</sup> 70.6	29.3	(NA)	24.4
3446 46	Aluminum.....	.....do.....	<sup>e</sup> 1.5	3.3	(NA)	4.3
	Other:					
3446 51	Iron and steel.....	.....	(X)	100.9	(X)	54.3
3446 56	Aluminum.....	.....	(X)	26.6	(X)	38.8
3446 61	Architectural and ornamental metalwork other than aluminum or steel.....	.....	(X)	13.5	(X)	5.4
3446 00	Ornamental and structural metalwork, n.s.k. (For establishments with 10 or more employees. (See Note.).....	.....	(X)	67.7	}	48.3
3446 02	Ornamental and structural metalwork, n.s.k. (For establishments with less than 10 employees. (See Note.).....	.....	(X)	35.9		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

<sup>e</sup>From 10 to 30 percent of this figure was estimated. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.



## 1967 CENSUS OF MANUFACTURES

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
INDUSTRY 3446---ARCHITECTURAL METALWORK						
	Materials, containers, parts, and supplies, total.....		(X)	165.2	(X)	99.9
	Mill shapes and forms (except castings):					
	Carbon steel:					
331009	Concrete reinforcing bars.....	1,000 short tons.	( <sup>1</sup> )	( <sup>1</sup> )	1.8	0.2
331010	Bars and bar shapes (except concrete reinforcing bars).....	..do.....	65.1	11.8	44.4	7.8
331012	Sheet and strip.....	..do.....	180.0	35.0	79.2	12.6
331013	Plates.....	..do.....	( <sup>1</sup> )	( <sup>1</sup> )	19.1	3.0
331015	Structural shapes.....	..do.....	35.0	6.5	36.6	6.1
331017	Wire and wire products.....	..do.....	( <sup>1</sup> )	( <sup>1</sup> )	3.7	0.8
331019	All other carbon steel mill shapes and forms.....	..do.....	<sup>1</sup> 47.9	<sup>1</sup> 8.3	15.6	3.1
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	..do.....	7.4	2.1	1.3	0.3
331029	All other alloy steel mill shapes and forms.....	..do.....			0.6	0.4
331031	Stainless steel.....	..do.....			0.7	0.8
	Copper and copper-base alloy:					
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	(NA)	4.0	0.7	1.7
335127	Pipe and tube.....	..do.....			0.4	0.3
335123	Plate, sheet, and strip, including military cups and discs...	..do.....				
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	..do.....	( <sup>2</sup> )	( <sup>2</sup> )	5.2	2.6
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	..do.....	35.6	16.0	17.5	7.7
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	..do.....	<sup>2</sup> 18.6	<sup>2</sup> 9.2	2.0	1.3
	Primary metals:					
333401	Aluminum and aluminum-base alloy refinery shapes (ingot, slugs, billet, etc.).....	1,000 short tons.	(D)	(D)	1.7	0.8
333348	Zinc and zinc-base alloy refinery shapes.....	..do.....	(D)	(D)	(D)	(D)
	Scrap (excluding home scrap):					
999811	Iron and steel.....	..do.....	(D)	(D)	(D)	(D)
999808	Aluminum and aluminum-base alloy.....	..do.....	(D)	(D)	(D)	(D)
	Castings (rough and semifinished):					
332011	Iron (gray and malleable).....	..do.....	(D)	(D)	2.1	0.7
332300	Steel.....	..do.....	(D)	(D)	(NA)	0.4
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	(D)	(D)	1.7	0.8
321101	Flat glass.....	Million sq. feet.	(D)	(D)	(NA)	(NA)
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	28.3	(X)	27.0
973000	Materials, etc., n.s.k. <sup>3</sup> .....		(X)	45.1	(X)	21.3

(D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or from related figures. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Data for material codes 331009, 331013, and 331017 are included with material code 331019, All other carbon steel mill shapes and forms.

<sup>2</sup>Data for material code 335202 is included with material code 335209, All other aluminum mill shapes and forms.

<sup>3</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3446, these small establishments accounted for approximately 8 percent of payrolls and 12 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

**U.S. DEPARTMENT OF COMMERCE  
BUREAU OF THE CENSUS  
WASHINGTON, D.C. 20233**

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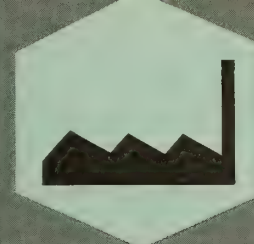
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# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

### Miscellaneous metalwork

SIC Code 3449

**preliminary  
report**

The Miscellaneous Metalwork Industry includes establishments primarily engaged in manufacturing miscellaneous ferrous and nonferrous metalwork, such as prefabricated and portable metal buildings and parts, metal plaster bases, fabricated bar joists and concrete reinforcing bars, and prefabricated exterior metal panels.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Miscellaneous Metalwork Industry amounted to \$1,102.0 million, an increase of 56

percent compared with 1963. Value added by manufacture at \$462.9 million in 1967 was 63 percent more than value added in 1963. Average employment in the industry showed an increase of 34 percent from 1963 to a total of 33.4 thousand employees in 1967.

Of the \$1,102.0 million total value of shipments and other receipts of establishments classified as Miscellaneous Metalwork, \$158 million were products primary to other industries; and \$103 million were receipts for miscellaneous activities. The industry shipments of primary products represented 84 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 89 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3449.—MISCELLANEOUS METALWORK														
1967 Census . . . .	651	280	33.4	227.5	23.9	48.7	143.5	462.9	643.7	1,102.0	23.5	184.4	84	78
1966 ASM <sup>1</sup> . . . . .	(NA)	(NA)	30.1	200.3	20.7	44.6	121.4	415.9	616.8	1,014.5	19.4	180.5	(NA)	(NA)
1965 ASM <sup>1</sup> . . . . .	(NA)	(NA)	27.3	169.5	18.5	39.0	98.9	360.2	501.9	859.0	13.4	149.2	(NA)	(NA)
1964 ASM <sup>1</sup> . . . . .	(NA)	(NA)	25.8	153.1	17.0	34.2	91.7	315.8	443.3	759.7	13.3	115.8	(NA)	(NA)
1963 Census <sup>2, 3</sup> . . . .	697	246	25.0	145.0	17.0	34.5	88.8	283.4	420.9	704.2	11.5	109.9	89	68
1962 ASM <sup>1</sup> . . . . .	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1961 ASM <sup>1</sup> . . . . .	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1960 ASM <sup>1</sup> . . . . .	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1959 ASM <sup>1</sup> . . . . .	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1958 Census <sup>4</sup> . . . .	248	(NA)	21.2	113.8	14.8	30.4	68.4	220.1	371.4	594.7	9.4	(NA)	(NA)	(NA)

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>For 1963, a sizeable number of small establishments (under 20 employees) may have been misclassified because of insufficient product information. Although this has a significant effect on the number of establishments for this industry it has a very small effect on any of the other statistics, i.e., number of employees, salaries and wages, value added, etc. It is estimated that the effect on these principal statistics is less than 3 percent.

<sup>3</sup>Prior to 1963 Industry 3449 was combined with Industry 3446 "Architectural Metalwork."

<sup>4</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued September 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director



The total value of Miscellaneous Metal Products shipped by all producers in 1967 was \$1,079.0 million of which \$841 million, or 78 percent, were shipped by plants classified in industry 3449, Miscellaneous Metalwork, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 68 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3449.--MISCELLANEOUS METALWORK												
United States, total.....	651	280	33.4	227.5	23.9	48.7	143.5	462.9	643.7	1,102.0	23.5	25.0	283.4
New England.....	23	8	0.9	6.5	0.7	1.5	4.6	10.2	18.2	28.4	0.7	0.4	3.9
Middle Atlantic.....	122	41	3.7	25.7	2.7	5.5	15.3	41.5	75.5	118.2	2.0	3.3	37.1
New York.....	43	10	0.9	5.4	0.7	1.3	3.5	12.1	16.4	27.2	1.0	1.3	13.6
New Jersey.....	27	7	0.6	4.3	0.5	0.9	2.8	7.3	17.6	24.6	0.2	0.6	7.4
Pennsylvania.....	52	24	2.2	16.1	1.6	3.2	9.0	22.1	41.6	66.4	0.7	1.4	16.1
East North Central.....	114	50	7.6	53.8	5.5	11.2	35.4	124.9	188.8	312.7	6.2	6.3	92.1
Ohio.....	30	14	2.3	16.4	1.7	3.5	11.6	32.8	62.0	95.8	2.4	1.7	24.8
Indiana.....	15	6	1.5	11.2	1.1	2.3	7.2	25.0	32.7	57.5	1.8	1.1	15.5
Illinois.....	31	18	3.0	20.2	2.1	4.2	13.1	55.4	79.1	133.3	1.5	2.9	46.1
Michigan.....	26	8	0.4	2.3	0.3	0.5	1.5	5.5	8.8	13.7	0.1	0.6	5.4
Wisconsin.....	12	4	0.5	3.8	0.3	0.7	2.0	6.3	6.1	12.4	0.4	(D)	(D)
West North Central....	44	19	2.8	17.8	1.9	3.9	10.5	35.0	41.4	77.1	1.9	2.4	24.4
Minnesota.....	8	6	0.7	5.0	0.6	1.2	3.4	9.8	10.7	20.9	0.1	0.8	6.4
Iowa.....	8	3	0.5	3.2	0.4	0.9	2.4	5.5	5.5	10.6	0.2	(D)	(D)
Missouri.....	12	3	0.2	1.4	0.2	0.3	0.7	3.0	4.7	7.7	(D)	0.2	2.7
South Atlantic.....	100	52	5.7	33.0	4.0	8.4	18.8	68.7	106.2	172.4	5.3	3.8	35.8
Maryland.....	14	11	1.5	9.2	0.8	1.6	4.1	20.2	22.0	40.4	0.7	1.0	9.2
South Carolina.....	10	6	1.1	5.3	0.8	1.7	3.5	10.5	15.5	25.6	0.8	(D)	(D)
Georgia.....	15	8	1.0	6.0	0.8	1.6	3.8	13.5	21.1	34.8	0.6	0.3	2.9
Florida.....	40	18	1.3	7.4	1.0	2.2	4.5	13.2	22.6	35.7	1.7	1.0	8.3
East South Central....	51	25	2.9	17.3	2.1	3.9	10.8	37.0	51.4	87.3	1.5	2.3	19.1
Tennessee.....	17	8	0.8	3.8	0.6	1.0	2.3	7.5	12.6	20.0	(D)	(D)	(D)
Alabama.....	20	10	1.4	9.2	1.0	2.0	6.0	19.3	27.5	45.9	(D)	1.3	13.0
West South Central....	88	38	3.3	20.1	2.4	5.3	13.6	40.8	50.8	91.3	1.6	2.7	19.9
Oklahoma.....	11	6	0.5	3.0	0.3	0.6	1.5	6.0	6.1	12.1	0.5	0.3	3.0
Texas.....	51	24	2.4	14.3	1.7	3.9	9.9	30.5	38.1	68.5	0.8	2.0	13.5
Mountain.....	27	11	0.9	6.0	0.5	1.1	3.5	13.4	17.2	29.0	0.4	0.6	4.7
Pacific.....	82	36	5.7	47.2	4.0	7.9	31.0	91.2	94.3	185.5	4.0	3.2	46.3
Washington.....	13	5	0.2	1.9	0.2	0.3	1.1	3.2	4.7	8.0	(D)	(D)	(D)
California.....	58	27	5.0	41.1	3.7	7.1	28.3	80.1	81.2	161.2	3.1	2.8	41.0

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3449- --	MISCELLANEOUS METALWORK, TOTAL.....		(X)	1,079.0	(X)	793.3
34492 --	Prefabricated and portable metal buildings and parts.....		(X)	367.0	(X)	224.5
34492 11	Grain storage buildings, including farm and commercial types:					
34492 21	Steel.....	1,000.....	10.2	53.4	12.3	23.1
	Aluminum.....	..do.....	(NA)	4.9		
	Other farm service buildings (livestock shelters, machinery storage, etc.) (excluding wood frame buildings):					
34492 12	Steel.....	..do.....	(NA)	17.8	4.8	12.9
34492 22	Aluminum.....	..do.....				
	Dwellings, including vacation homes and camp buildings:					
34492 13	Steel.....	..do.....	e2.6	9.7	(NA)	2.0
34492 23	Aluminum.....	..do.....				
	Industrial and commercial buildings:					
34492 14	Steel.....	..do.....	e25.0	176.8	18.2	115.8
34492 24	Aluminum.....	..do.....				
	Small utility buildings, including tool sheds, cabanas, storage houses, etc.:					
34492 16	Steel.....	..do.....	(NA)	16.4	(NA)	(NA)
34492 26	Aluminum.....	..do.....	(NA)	3.4	(NA)	(NA)
	Other (including garages, etc.):					
34492 17	Steel.....	..do.....	(NA)	12.9	(NA)	18.5
34492 27	Aluminum.....	..do.....	2.9	9.0	(NA)	16.2
	Panels, parts or sections for prefabricated buildings, not sold as a complete unit, including sandwich and single face panels:					
34492 53	Steel.....	..do.....	(NA)	20.0	(NA)	16.9
34492 55	Aluminum.....	..do.....	(NA)	16.5	(NA)	9.2
34492 00	Prefabricated and portable metal buildings and parts, n.s.k....		(X)	26.2	(X)	4.0
34493 --	Miscellaneous metal building materials and curtain wall.....		(X)	616.0	(X)	506.5
	Metal plaster bases:					
34493 11	Expanded metal lath.....	Million sq. yds.	e81.2	29.1	66.8	23.3
34493 32	Metal plaster base accessories (including corner beads, screens, grounds, etc.).....		(X)	20.7	(X)	31.9
34493 42	Fabricated bar joists.....	1,000 short tons.....	e679.5	149.0	381.0	89.3
34493 52	Fabricated concrete reinforcing bars.....	..do.....	2,169.4	329.1	2,080.3	276.8
	Curtain wall:					
34493 73	Steel, including stainless.....	Million sq. ft.	(NA)	7.3	14.0	10.1
34493 75	Aluminum.....	..do.....	(NA)	32.0	11.7	41.4
34493 79	All other, including combination of metals.....	..do.....	e22.3	24.4	(NA)	13.4
34493 00	Miscellaneous metal building materials and curtain wall, n.s.k....		(X)	24.4	(X)	20.4
34490 00	Miscellaneous metalwork, n.s.k. (For establishments with 10 or more employees. See Note.).....		(X)	85.3	(X)	62.3
34490 02	Miscellaneous metalwork, n.s.k. (For establishments with less than 10 employees. See Note.).....		(X)	10.7		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

eFrom 10 to 30 percent of this figure was estimated. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963		
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)	
INDUSTRY 3449.--MISCELLANEOUS METALWORK							
	Materials, containers, parts, and supplies, total.....		(X)	551.7	(X)	360.4	
	Mill shapes and forms (except castings):						
	Carbon steel:						
331009	Concrete reinforcing bars.....	1,000 short tons.	1,004.9	114.4	972.9	102.4	
331010	Bars and bar shapes (except concrete reinforcing bars).....	..do.....	323.1	45.5	222.6	32.1	
331012	Sheet and strip.....	..do.....	645.3	113.2	430.7	72.7	
331013	Plates.....	..do.....	101.0	16.8	63.1	9.4	
331015	Structural shapes.....	..do.....	174.9	25.7	79.6	12.8	
331017	Wire and wire products.....	..do.....	58.1	8.5	60.8	9.3	
331019	All other carbon steel mill shapes and forms.....	..do.....			24.9	4.2	
	Alloy steel (except stainless):						
331021	Bars and bar shapes.....	..do.....	5.4	2.7	3.3	0.7	
331029	All other alloy steel mill shapes and forms.....	..do.....			10.1	2.0	
331031	Stainless steel.....	..do.....			0.9	1.3	
	Copper and copper-base alloy:						
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	(1)	(1)	(NA)	0.4	
335127	Pipe and tube.....	..do.....					
335123	Plate, sheet, and strip, including military cups and discs...	..do.....					
	Aluminum and aluminum-base alloy:						
335202	Sheet, plate, and foil.....	..do.....	30.7	12.5	27.3	11.0	
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	..do.....	21.2	10.2	18.2	8.0	
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	..do.....			0.6	0.3	
	Primary metals:						
333401	Aluminum and aluminum-base alloy refinery shapes (ingot, slugs, billet, etc.).....	1,000 short tons.	(2)	(2)	(2)	(2)	
333348	Zinc and zinc-base alloy refinery shapes.....	..do.....					
	Scrap (excluding home scrap):						
999811	Iron and steel.....	..do.....	634.2	11.4	(2)	(2)	
	Castings (rough and semifinished):						
332011	Iron (gray and malleable).....	..do.....	(1)	(1)	1.8	0.6	
332300	Steel.....	..do.....	(2)	(2)	(2)	(2)	
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	(1)	(1)	0.5	0.5	
321101	Flat glass.....	Million sq. ft...	(1)	(1)	(NA)	(NA)	
970099	All other materials and components, parts, containers, and supplies consumed.....	..do.....	(X)	118.6	(X)	49.4	
973000	Materials, etc., n.s.k <sup>3</sup> .....	..do.....	(X)	72.2	(X)	43.3	

- Represents zero. (D) Withheld to avoid disclosing operations of individual companies. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Included with 970099 "All other materials and components, etc." The value consumed for these individual materials is less than \$2.5 million.

<sup>2</sup>The cost of these materials are included in material code 970099 "All other materials and components, etc." to avoid disclosing the operations of individual companies.

<sup>3</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3449, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

**U.S. DEPARTMENT OF COMMERCE  
BUREAU OF THE CENSUS  
WASHINGTON, D.C. 20233**

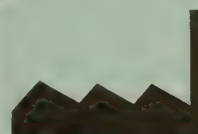
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# 1967 CENSUS OF MANUFACTURES



MC67(P)-34D-1

## INDUSTRY SERIES

### Screw machine products

SIC Code 3451

**preliminary  
report**

The Screw Machine Products Industry includes establishments primarily engaged in manufacturing automatic or hand screw machine products from rod, bar, or tube stock of metal, fiber, plastics or other materials. The products of this industry consist of a wide variety of unassembled parts and are usually manufactured on a job or order basis. Establishments primarily engaged in manufacturing standard bolts, nuts, rivets, screws and other industrial fasteners on headers, threaders and nut forming machines are classified in industry 3452.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classi-

fied in the Screw Machine Products Industry amounted to \$1,028.1 million, an increase of 75 percent compared with 1963. Value added by manufacture at \$652.0 million in 1967 was 82 percent more than value added in 1963. Average employment in the industry showed an increase of 26 percent from 1963 to a total of 49 thousand employees in 1967.

Of the \$1,028.1 million total value of shipments and other receipts of establishments classified as screw machine products, \$43 million were products primary to other industries; and \$47 million were receipts for miscellaneous activities. The industry shipments of primary products represented 96 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 97 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)
INDUSTRY 3451.--SCREW MACHINE PRODUCTS														
1967 Census....	1,875	684	49.3	351.4	41.8	89.0	260.3	652.0	382.2	1,028.1	50.0	95.5	96	90
1966 ASM <sup>1</sup> .....	(NA)	(NA)	46.1	309.0	39.2	85.1	234.9	555.4	391.9	949.0	38.6	117.0	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	40.1	251.4	33.4	73.0	189.9	425.4	308.1	734.1	23.8	73.8	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	36.3	226.0	30.2	65.8	170.8	367.3	267.6	636.4	*20.2	61.8	(NA)	(NA)
1963 Census....	1,874	516	36.9	213.2	30.8	64.3	160.0	359.0	232.9	589.0	18.7	58.8	97	90
1962 ASM <sup>1</sup> .....	(NA)	(NA)	36.5	192.1	30.0	58.9	140.2	312.4	210.6	518.3	*12.6	51.1	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	32.1	164.4	26.3	50.8	116.6	268.8	186.7	458.0	*8.8	50.7	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	35.5	177.1	29.2	58.7	129.9	300.7	204.2	502.8	(S)	55.6	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	34.2	169.2	28.9	58.1	129.4	301.3	221.7	519.1	(S)	54.6	(NA)	(NA)
1958 Census <sup>2</sup> ...	1,792	419	31.8	154.9	25.9	51.9	114.0	250.0	175.1	425.1	11.2	48.7	94	87

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

(S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 2 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued September 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary  
Rocco C. Siciliano, Under Secretary  
**BUREAU OF THE CENSUS**

## 1967 CENSUS OF MANUFACTURES

The total value of screw machine products shipped by all producers in 1967 was \$1,023.3 million of which \$938 million, or 90 percent, were shipped by plants classified in industry 3451, Screw Machine Products, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 90 percent in 1963.

These ratios were developed to measure the extent of which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)						
INDUSTRY 3451.--SCREW MACHINE PRODUCTS													
United States, total.....	1,875	684	49.3	351.4	41.8	89.0	260.3	652.0	382.2	1,028.1	50.0	36.9	359.0
New England.....	315	96	7.7	51.1	6.5	14.0	37.0	89.5	44.3	132.8	7.9	6.1	51.2
Massachusetts.....	89	33	2.7	17.3	2.3	5.0	13.0	30.3	14.4	44.4	2.8	2.1	16.7
Connecticut.....	179	55	4.4	30.0	3.7	7.9	21.3	52.5	26.1	77.9	4.3	3.4	29.6
Middle Atlantic.....	348	129	7.9	52.2	6.7	13.9	39.2	102.6	57.2	159.3	9.3	6.1	56.8
New York.....	165	66	3.8	25.8	3.3	7.0	19.3	49.3	31.2	80.2	4.0	3.1	28.3
New Jersey.....	106	30	2.0	14.1	1.7	3.5	10.5	28.2	13.0	40.7	2.6	1.8	18.6
Pennsylvania.....	77	33	2.0	12.4	1.7	3.4	9.5	25.0	13.0	38.4	2.8	1.2	9.9
East North Central....	848	331	24.5	181.4	20.9	44.8	135.7	332.0	220.7	549.6	22.8	19.1	191.8
Ohio.....	186	80	6.2	43.4	5.2	11.0	33.0	74.1	47.3	121.3	6.2	5.0	45.9
Indiana.....	70	32	2.9	19.9	2.5	5.4	15.3	38.7	23.1	61.8	1.9	1.7	17.2
Illinois.....	256	83	7.4	56.2	6.2	13.1	41.1	100.8	59.4	158.6	7.5	5.8	52.7
Michigan.....	276	112	6.7	52.5	5.8	13.0	39.4	101.2	80.7	180.8	5.8	5.6	66.1
Wisconsin.....	60	24	1.3	9.5	1.1	2.3	6.9	17.3	10.1	27.1	1.4	1.0	9.8
West North Central....	78	38	2.8	19.9	2.3	4.9	14.5	37.7	18.1	56.0	2.8	1.7	15.9
Missouri.....	37	19	1.3	9.2	1.0	2.1	6.3	16.8	7.9	24.7	1.3	0.8	7.9
South Atlantic.....	34	9	0.9	4.9	0.7	1.4	3.4	8.4	7.0	15.6	0.9	0.4	5.0
East South Central....	10	5	0.3	1.7	0.2	0.5	1.1	3.7	1.9	5.6	0.5	0.2	1.7
West South Central....	19	11	0.5	3.1	0.4	0.9	2.3	6.2	3.6	9.8	0.4	0.4	3.5
West.....	223	65	4.8	37.0	4.0	8.6	27.1	71.9	29.4	99.4	5.4	3.1	33.2
Arizona.....	7	3	0.1	0.8	0.1	0.2	0.6	1.7	0.6	2.3	(D)	(D)	(D)
Oregon.....	3	3	0.1	1.0	0.1	0.2	0.8	1.6	0.5	2.1	(D)	(D)	(D)
California.....	199	55	4.4	34.5	3.6	7.9	25.0	67.4	27.0	92.7	(D)	2.8	30.5

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.



TABLE 3. Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Value of shipments including interplant transfers (million dollars)	
		1967	1963
3451- --	SCREW MACHINE PRODUCTS, TOTAL.....	1,023.3	599.4
34510 12	Automotive.....	226.7	116.5
34510 22	Aircraft and ordnance.....	169.7	79.7
34510 42	Household appliances, including radio and television.....	69.3	43.9
34510 62	Machinery.....	91.2	55.4
34510 98	All other end uses.....	315.1	218.3
34510 00	Screw machine products, n.s.k. (For companies with 10 or more employees. See note.).....	121.7	85.5
34510 02	Screw machine products, n.s.k. (For companies with less than 10 employees. See Note.).....	29.6	

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3451.--SCREW MACHINE PRODUCTS					
	Materials, parts, containers, and supplies, total.....		(X)	328.2	(X)	183.7
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	328.1	85.0	225.6	55.7
331012	Sheet and strip.....	do.	11.0	2.3	2.9	0.6
331017	Wire and wire products.....	do.	13.2	3.1	4.8	1.1
331013	Plates.....	do.	0.4	0.1	0.4	0.1
331019	All other carbon steel mill shapes and forms.....	do.	7.6	1.5	3.3	1.0
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	do.	28.3	9.3	17.3	6.1
331029	All other alloy steel mill shapes and forms.....	do.	(NA)	1.7	1.0	0.9
331031	Stainless steel mill shapes and forms.....	do.	11.6	17.1	6.3	8.4
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction).....	Million lbs.....	13.4	8.0	2.9	1.3
334102	Rod, bar, and mechanical wire.....	do.	84.5	41.7	79.8	30.1
335123	Plate, sheet, and strip.....	do.	0.3	0.8	(Z)	0.1
335127	Pipe and tube.....	do.	4.5	2.4	1.6	0.7
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	do.	5.8	3.9	0.3	0.2
335205	Extruded shapes.....	do.	18.0	12.0	7.3	4.7
335209	All other aluminum mill shapes and forms.....	do.	7.6	5.4	3.8	2.6
	Castings (rough and semifinished): <sup>1</sup>					
332300	Steel.....	1,000 short tons.	3.7	2.8	3.1	1.5
307902	Plastic rods, tubes, and other shapes.....		(NA)	0.6	(NA)	0.6
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	65.7	(X)	37.7
976000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> .....		(X)	64.8	(X)	30.3

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable. (Z) Less than half the unit of measure specified.

<sup>1</sup>In 1967 there were, in addition 5.5 thousand short tons of steel castings producing and consumed in the same establishment. The comparable figure for 1963 was 1.9 thousand.

<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3451, these small establishments accounted for approximately 2 percent of payrolls and 3 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees**--All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls**--This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours**--This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials**--The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

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"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



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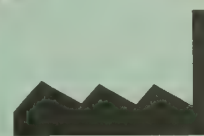
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# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

### Bolts, nuts, rivets, and washers

SIC Code 3452

**preliminary  
report**

The Bolts, Nuts, Screws, Rivets, and Washers Industry includes establishments primarily engaged in manufacturing bolts, nuts, screws, rivets, washers, formed and threaded wire goods, and special industrial fasteners. Rolling mills engaged in manufacturing similar products are classified in Major Group 33, and establishments primarily engaged in manufacturing screw machine products in industry 3451.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Bolts, Nuts, Rivets, and Washers

Industry amounted to \$1,627.8 million, an increase of 34 percent compared with 1963. Value added by manufacture at \$967.6 million in 1967 was 39 percent more than value added in 1963. Average employment in the industry showed an increase of 16 percent from 1963 to a total of 66.6 thousand employees in 1967.

Of the \$1,627.8 million total value of shipments and other receipts of establishments classified as bolts, nuts, rivets, and washers, \$107 million were products primary to other industries; and \$92 million were receipts for miscellaneous activities. The industry shipments of primary products represented 93 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 92 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3452.--BOLTS, NUTS, RIVETS, AND WASHERS														
1967 Census....	660	392	66.6	494.5	51.8	108.1	344.6	967.6	685.0	1,627.8	67.4	314.4	93	90
1966 ASM <sup>1</sup> .....	(NA)	(NA)	62.5	463.5	47.6	104.9	319.7	963.2	724.4	1,661.8	70.6	297.1	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	62.3	432.3	48.0	103.6	304.0	846.2	647.7	1,480.1	54.6	264.9	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	59.7	400.8	45.5	97.3	279.5	763.3	592.8	1,344.2	37.4	240.1	(NA)	(NA)
1963 Census....	573	323	57.6	371.0	44.0	92.5	257.5	695.3	527.9	1,218.2	31.4	222.2	92	90
1962 ASM <sup>1</sup> .....	(NA)	(NA)	57.4	360.6	43.5	91.7	241.1	649.1	514.7	1,158.0	31.0	219.7	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	55.0	324.1	41.5	83.6	214.8	561.2	445.4	1,005.5	21.2	214.8	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	58.5	331.4	44.3	88.8	221.8	595.9	465.3	1,044.8	29.3	218.0	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	58.8	339.0	45.1	94.9	231.7	636.0	487.3	1,112.9	*33.2	204.9	(NA)	(NA)
1958 Census <sup>2</sup> ...	525	283	53.3	286.0	40.2	80.6	191.9	504.7	370.6	880.3	43.7	188.1	91	87

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 5 and 2, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued September 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director

## 1967 CENSUS OF MANUFACTURES

The total value of bolts, nuts, rivets, and washers shipped by all producers in 1967 was \$1,586.2 million of which \$1,429 million, or 90 percent, were shipped by plants classified in industry 3452, Bolts, Nuts, Rivets, and Washers, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was also 90 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture  (million dollars)	Cost of materials  (million dollars)	Value of shipments  (million dollars)	Capital expenditures, new  (million dollars)	All employees  (1,000)	Value added by manufacture  (million dollars)
	Total  (number)	With 20 employees or more (number)	Number  (1,000)	Payroll  (million dollars)	Number  (1,000)	Man-hours  (millions)	Wages  (million dollars)						
	INDUSTRY 3452.--BOLTS, NUTS, RIVETS, AND WASHERS												
United States, total.....	660	392	66.6	494.5	51.8	108.1	344.6	967.6	685.0	1,627.8	67.4	57.6	695.3
New England.....	95	51	8.8	61.0	6.5	14.2	39.9	112.6	65.7	176.0	5.0	8.4	88.9
Massachusetts.....	27	15	4.1	28.9	3.1	6.8	19.1	50.2	28.8	77.5	2.0	4.4	42.0
Connecticut.....	51	25	3.4	24.3	2.4	5.2	15.3	48.5	26.6	74.5	2.5	2.9	36.6
Middle Atlantic.....	129	69	13.9	102.6	10.5	21.0	72.4	192.3	123.5	312.1	17.2	12.1	143.3
New York.....	46	20	3.2	22.7	2.3	5.2	15.2	46.4	34.4	80.5	3.1	3.0	36.1
New Jersey.....	31	21	3.6	30.1	2.6	5.5	20.3	57.7	31.8	88.0	5.2	3.2	44.8
Pennsylvania.....	52	28	7.0	49.8	5.6	10.3	36.9	88.1	57.2	143.7	8.8	5.9	62.5
East North Central....	287	186	30.9	238.6	24.3	51.3	167.2	465.9	370.1	822.6	32.0	28.6	357.8
Ohio.....	78	55	11.0	84.4	8.7	17.9	58.6	157.9	135.6	288.6	8.7	9.6	110.5
Indiana.....	16	9	1.1	7.7	0.8	1.6	5.2	13.6	15.2	28.4	1.1	1.1	14.0
Illinois.....	106	67	12.8	96.9	10.1	21.8	69.0	193.2	125.1	313.2	14.0	12.6	160.7
Michigan.....	74	48	5.2	42.9	4.0	8.6	30.0	88.2	84.5	169.8	7.8	4.6	64.3
Wisconsin.....	13	7	0.9	6.7	0.7	1.4	4.4	13.0	9.7	22.6	0.5	0.7	8.4
West North Central....	16	9	0.7	4.5	0.5	1.0	3.0	8.8	10.2	18.8	0.6	0.5	5.9
Missouri.....	7	4	0.3	1.8	0.2	0.4	1.1	3.3	3.6	6.6	0.4	0.2	2.8
South Atlantic.....	18	9	1.9	10.3	1.6	3.1	7.5	28.1	18.0	45.5	1.2	1.5	21.3
East South Central....	18	10	1.9	10.7	1.6	3.2	8.1	18.7	18.7	36.5	2.1	1.1	11.0
West South Central....	21	10	0.8	4.2	0.7	1.2	2.9	8.1	9.4	17.8	0.6	0.6	4.1
West.....	76	48	7.8	62.6	6.1	13.2	43.6	133.1	69.4	198.3	8.7	4.8	63.0
California.....	70	45	7.7	61.8	6.0	13.0	43.1	131.8	67.9	195.4	(D)	4.7	62.1

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3452- --	BOLTS, NUTS, RIVETS, AND WASHERS, TOTAL.....		(X)	1,586.2	(X)	1,175.7
34521 --	Bolts, nuts, and other standard industrial fasteners.....		(X)	980.6	(X)	843.0
	Bolts, threaded rods, lag screws, and studs, including nuts when nuts and bolts are sold as a unit:					
34521 01	Mine roof bolts.....	Million lbs...	506.4	87.2	(NA)	(NA)
34521 02	Aircraft bolts.....	.....do.....	6.3	27.5	5.8	20.6
34521 03	Standard hex, square, and 12-point bolts and screws.....	.....do.....	404.2	107.3	259.8	59.6
34521 04	Standard round head bolts (carriage, elevator, step, plow, and track).....	.....do.....	121.3	26.8	281.4	60.9
34521 05	Lag screws and bolts.....	.....do.....	29.9	8.2	68.0	16.2
34521 07	Studs, threaded rods, and threaded wires.....	.....do.....	116.7	33.7	122.7	46.9
	Nuts:					
34521 13	Standard nuts (hexagon, or square, regular, heavy, or jam, finished, semifinished or unfinished, including slotted or castle) (excluding sheet metal nuts).....	.....do.....	160.0	70.1	221.0	70.0
	Locknuts (excluding sheet metal nuts):					
34521 15	Aircraft.....	.....do.....	23.8	39.4	14.9	32.8
34521 17	Commercial (except aircraft).....	.....do.....	33.7	19.8	27.9	17.0
34521 18	Sheet metal nuts, including push-on, "J" and "U" type slip-on cage, anchor, and locknuts, nut retainers, etc.....	.....do.....	14.2	25.6	25.3	18.2
34521 19	Other nuts, including machine screw and stove bolt nuts, wingnuts, etc.....	.....do.....	61.2	30.0	53.6	33.5
	Screws:					
34521 23	Cap and set screws, hexagon head, 1/4" diameter and larger....	Million pieces	2,353.1	61.9	3,638.6	73.6
34521 25	Other cap and set screws.....	.....do.....	1,536.5	28.0	854.6	35.5
34521 33	Machine screws, including stove bolts.....	.....do.....	10,002.9	62.3	13,734.2	65.5
34521 36	Tapping screws (thread-forming and thread-cutting screws, including sheet metal and hardened metallic drive screws)....	.....do.....	25,989.4	90.0	13,594.1	55.4
34521 38	Wood screws (except wood-drive screws).....	Million gross.	22.2	19.0	40.9	18.9
34521 39	Other screws.....	.....do.....	(NA)	13.5	(NA)	24.5
	Washers:					
34521 45	Spring, spiral, and other lock.....	Million pieces	10,050.5	31.3	11,079.4	24.9
34521 49	Flat and other.....	1,000 lbs.....	(NA)	33.1	(NA)	30.4
	Rivets:					
34521 51	Aircraft rivets.....	Million lbs...	15.7	29.9	(NA)	13.4
34521 53	7/16" and under (other than aircraft).....	.....do.....	75.3	39.9	125.2	41.9
34521 57	1/2" and over (other than aircraft).....	.....do.....	29.9	5.1	73.8	12.0
34521 81	Pins (aircraft, straight, dowel, clevis, cotter, and miscellaneous patent).....		(X)	16.0	(X)	19.4
34521 85	Toggle bolts and similar devices.....		(X)	13.3	(X)	32.6
34521 98	Other standard fasteners.....		(X)	38.3	(X)	19.2
34521 00	Bolts, nuts, screws, rivets, etc., n.s.k.....		(X)	23.4	(X)	19.2
34522 15	Special industrial fasteners (nonstandard).....		(X)	343.9	(X)	241.5
34523 --	Headed products (produced by cold and hot heading), other than industrial fasteners.....		(X)	195.9	(X)	76.7
	Other headed products:					
34523 12	Automotive.....		(X)	91.2	(X)	43.0
34523 22	Aircraft and ordnance.....		(X)	46.0	(X)	6.5
34523 42	Household appliances, including radio and television.....		(X)	8.5	(X)	9.8
34523 98	All other end uses.....		(X)	50.2	(X)	17.4
34520 00	Bolts, nuts, rivets, and washers, n.s.k. (For companies with 10 or more employees. See Note.).....		(X)	60.9	(X)	14.5
34520 02	Bolts, nuts, rivets, and washers, n.s.k. (For companies with less than 10 employees. See Note.).....		(X)	4.9		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.



## 1967 CENSUS OF MANUFACTURES

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3452.--BOLTS, NUTS, RIVETS, AND WASHERS					
	Materials, parts, containers, and supplies, total.....		(X)	560.6	(X)	433.6
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons..	330.0	57.4	304.0	51.1
331012	Sheet and strip.....	..do.....	185.1	35.3	131.1	23.3
331013	Plates.....	..do.....	34.1	4.3	21.9	2.4
331017	Wire and wire products.....	..do.....	655.4	136.2	653.9	128.0
331019	All other carbon steel mill shapes and forms.....	..do.....	42.0	8.0	48.7	10.9
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	..do.....	58.7	17.4	51.8	14.1
331029	All other alloy steel mill shapes and forms.....	..do.....	47.1	15.9	48.9	15.3
331031	Stainless steel mill shapes and forms.....	..do.....	14.7	20.9	15.3	20.5
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction).....	Millions of lbs...	3.9	3.0	10.5	10.6
335102	Rod, bar, and mechanical wire.....	1,000 lbs.....	52.3	36.5	33.6	18.1
335127	Pipe and tube.....	..do.....				
335123	Sheet, plate, and strip.....	..do.....			13.7	7.0
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	..do.....	32.7	16.1	2.4	1.1
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	..do.....			2.2	1.0
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	..do.....			11.5	7.1
332300	Steel castings (rough and semifinished) <sup>2</sup> .....	1,000 short tons..	4.6	3.6	6.9	4.3
307902	Plastic rods, tubes, and other shapes.....	.....			(X)	0.7
970099	All other materials and components, parts, containers, and supplies consumed.....	.....	(X)	135.4	(X)	100.6
976000	Materials, parts, containers, and supplies, n.s.k. <sup>3</sup> .....	.....	(X)	70.6	(X)	27.4

n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>These figures include "Insulated wire and cable."<sup>2</sup>In 1967, there were in addition 3.2 thousand short tons of steel castings produced and consumed in the same establishment. Data for 1963 are not available.<sup>3</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3452, these small establishments accounted for approximately 0 percent of payrolls and 0 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-34D-3

## INDUSTRY SERIES

### Metal stampings

SIC Code 3461

## preliminary report

The Metal Stampings Industry includes establishments primarily engaged in manufacturing metal stampings by the use of tools, dies, jigs, and fixtures to punch, draw, form or otherwise modify materials under pressure in a machine (primarily punch and draw presses).

The classification of establishments for which data are tabulated in this report is based upon the

definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Metal Stampings Industry amounted to \$5,844.8 million, an increase of 29 percent compared with 1963. Value added by manufacture at \$3,005.3 million in 1967 was 32 percent more

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3461.--METAL STAMPINGS (Including automotive stamping plants operated by automobile producing companies) <sup>1</sup>														
1967 Census....	2,702	1,343	224.8	1,675.1	186.0	377.8	1,264.0	3,005.3	2,850.9	5,844.8	192.0	696.4	89	92
1966 ASM <sup>2</sup> .....	(NA)	(NA)	226.1	1,645.3	190.2	396.1	1,220.2	3,034.6	3,041.4	5,982.6	263.8	732.9	(NA)	(NA)
1965 ASM <sup>2</sup> .....	(NA)	(NA)	208.4	1,492.2	172.8	368.5	1,145.0	2,850.5	2,854.1	5,679.0	304.8	680.7	(NA)	(NA)
1964 ASM <sup>2</sup> .....	(NA)	(NA)	191.3	1,325.0	159.4	339.3	1,013.4	2,540.4	2,462.7	4,908.2	240.0	623.0	(NA)	(NA)
1963 Census....	2,590	1,132	182.2	1,224.8	150.2	316.5	909.6	2,280.7	2,260.3	4,526.2	105.1	512.9	88	92
INDUSTRY 3461.--METAL STAMPINGS (Excluding automotive stamping plants operated by automobile producing companies) <sup>1</sup>														
1966 ASM <sup>2</sup> .....	(NA)	(NA)	164.1	1,058.1	137.3	281.4	787.9	1,903.6	1,883.2	3,755.8	140.1	501.9	(NA)	(NA)
1965 ASM <sup>2</sup> .....	(NA)	(NA)	148.4	924.1	122.0	252.7	680.6	1,673.1	1,650.2	3,287.8	132.3	462.9	(NA)	(NA)
1964 ASM <sup>2</sup> .....	(NA)	(NA)	138.2	836.7	114.6	235.8	615.3	1,444.4	1,480.0	2,905.1	155.7	395.4	(NA)	(NA)
1963 Census....	2,574	1,116	132.2	772.6	108.3	222.0	567.3	1,369.0	1,324.9	2,679.0	64.2	360.8	84	86
1962 ASM <sup>2</sup> .....	(NA)	(NA)	132.8	754.9	107.8	224.8	546.9	1,310.4	1,305.6	2,605.8	68.7	317.1	(NA)	(NA)
1961 ASM <sup>2</sup> .....	(NA)	(NA)	125.3	684.1	100.6	207.3	486.1	1,181.2	1,160.1	2,338.0	48.4	296.1	(NA)	(NA)
1960 ASM <sup>2</sup> .....	(NA)	(NA)	134.3	729.0	108.0	225.6	521.1	1,220.4	1,230.0	2,450.8	56.5	301.9	(NA)	(NA)
1959 ASM <sup>2</sup> .....	(NA)	(NA)	135.3	727.8	109.7	227.3	524.3	1,240.5	1,269.1	2,499.0	80.9	323.4	(NA)	(NA)
1958 Census <sup>3</sup> ....	2,454	1,039	125.3	644.2	99.8	199.7	457.3	1,045.2	1,039.4	2,095.4	50.4	315.0	86	87

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Data for 1963 to 1966 have been revised by the inclusion of automotive stampings plants operated by automobile producing companies. Prior to this revision, most of these plants were classified in the automotive industry. The data shown excluding such plants for the years 1958 to 1966 are as previously published for this industry. The area data for prior years have not been revised on a basis comparable to 1967.

<sup>2</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>3</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

Harold C. Passer, Assistant Secretary for Economic Affairs

BUREAU OF THE CENSUS George Hay Brown, Director



than value added in 1963. Average employment in the industry showed an increase of 23 percent from 1963 to a total of 224.8 thousand employees in 1967.

Of the \$5,844.8 million total value of shipments and other receipts of establishments classified as metal stampings, \$607.8 million were products primary to other industries; and \$195.8 million were receipts for miscellaneous activities. The industry shipments of primary products represented 89 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 88 percent in 1963.

The total value of metal stampings shipped by all producers in 1967 was \$5,504.6 million of which \$5,041.2 million, or 92 percent, were shipped by plants classified in industry 3461, Metal Stampings, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was also 92 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

#### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3461, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

TABLE 2. General Statistics, by Geographic Areas: 1967

(See appendix, "Explanation of Terms")

Geographic area	1967										
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages				
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)
INDUSTRY 3461.--METAL STAMPINGS <sup>1</sup>											
United States, total.....	2,702	1,343	224.8	1,675.1	186.0	377.8	1,264.0	3,005.3	2,850.9	5,844.8	192.0
New England.....	268	126	13.4	86.1	10.8	22.4	61.3	144.8	123.1	265.5	10.3
Massachusetts.....	111	56	4.3	26.8	3.4	7.1	18.6	44.5	27.7	71.7	1.6
Rhode Island.....	33	15	1.1	6.7	1.0	1.9	5.2	13.2	8.6	22.0	1.6
Connecticut.....	114	52	7.8	51.7	6.3	13.1	36.9	85.6	85.9	169.4	6.8
Middle Atlantic.....	600	256	39.8	297.3	32.3	65.7	219.4	492.2	418.3	915.3	32.5
New York.....	318	124	17.5	122.8	14.4	28.9	90.4	214.6	171.2	384.2	9.8
New Jersey.....	167	71	7.0	48.9	5.7	11.6	34.3	86.1	67.9	153.4	5.1
Pennsylvania.....	114	61	15.2	125.5	12.2	25.1	94.6	191.5	179.1	377.5	17.7
East North Central.....	1,204	695	142.7	1,115.5	118.6	239.8	853.7	2,034.0	2,000.6	4,024.1	125.9
Ohio.....	273	176	37.5	298.7	31.1	63.0	230.4	541.8	551.5	1,090.1	24.1
Indiana.....	95	58	11.6	86.9	9.6	19.2	67.2	149.3	166.4	315.3	8.4
Illinois.....	360	174	27.9	208.4	23.4	46.6	158.3	393.7	356.9	750.9	23.7
Michigan.....	387	234	54.3	449.0	45.5	92.8	347.9	803.7	798.7	1,599.2	61.7
Wisconsin.....	89	53	11.5	72.4	9.1	18.1	49.4	145.4	127.1	268.6	7.9
West North Central.....	130	69	7.2	48.1	5.8	11.9	33.4	77.8	59.2	136.4	6.4
Minnesota.....	67	42	3.8	25.5	3.0	6.2	18.2	42.1	24.8	66.4	2.2
Missouri.....	43	22	2.6	17.4	2.1	4.2	11.4	27.3	25.6	52.6	3.6
South Atlantic.....	87	40	6.2	35.7	5.2	10.5	26.7	71.1	89.5	159.3	6.4
West Virginia.....	8	6	0.7	3.6	0.6	1.2	2.8	6.3	4.7	10.8	0.3
North Carolina.....	21	9	0.8	4.7	0.7	1.4	3.4	9.5	8.0	17.6	0.5
Georgia.....	14	8	1.9	10.0	1.6	3.6	7.9	20.0	23.0	42.7	1.5
East South Central.....	67	46	6.8	35.1	5.9	12.3	26.6	70.4	80.4	150.2	3.8
Kentucky.....	25	21	2.5	14.3	2.1	4.2	10.5	22.1	24.0	47.1	1.8
Tennessee.....	21	9	1.7	7.6	1.5	3.2	5.8	18.8	19.6	37.7	0.7
Alabama.....	11	8	0.8	4.8	0.7	1.5	3.5	10.2	14.8	24.9	0.3
Mississippi.....	10	8	1.8	8.4	1.6	3.4	6.8	19.4	22.0	40.5	0.9
West South Central.....	55	22	2.1	11.6	1.7	3.7	8.4	24.9	22.2	46.4	2.5
Texas.....	37	13	1.0	5.5	0.7	1.8	3.8	12.8	12.0	24.5	1.6
Mountain.....	18	3	0.2	0.9	0.1	0.3	0.7	1.5	1.0	2.5	(D)
Pacific.....	273	86	6.5	44.8	5.5	11.3	33.7	88.5	56.5	145.2	(D)
Washington.....	13	2	0.2	1.4	0.2	0.3	1.1	2.7	2.2	5.2	0.2
Oregon.....	10	3	0.2	1.1	0.2	0.3	0.9	1.5	1.0	2.4	(D)
California.....	250	81	6.0	42.3	5.1	10.6	31.7	84.2	53.4	137.6	3.6

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

<sup>1</sup>Data for 1963 are not comparable to the 1967 information (See footnote 1, table 1).

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3461- --	METAL STAMPINGS, TOTAL.....		(X)	5,504.6	(X)	4,183.6
34611 --	Vitreous-enameled products.....		(X)	166.9	(X)	170.1
34611 13	Household cooking and kitchen utensils.....		(X)	26.7	(X)	23.6
34611 23	Commercial and hospital utensils.....		(X)	1.7		
34611 41	Architectural vitreous (porcelain) parts (exterior and interior), including store front and curtain wall components.....		(X)	10.3	(X)	23.0
34611 75	Laundry equipment parts (sold separately).....		(X)	3.3	(X)	7.7
34611 98	Other vitreous (porcelain) enameled products, including refrigerator parts.....		(X)	21.7	(X)	15.8
34611 00	Vitreous enameled products, n.s.k.....		(X)	3.2	(X)	-
34612 --	Job stampings, except automotive <sup>2</sup> .....		(X)	1,076.0	(X)	756.7
34612 11	Aviation stampings.....		(X)	175.9	(X)	19.8
34612 15	Agricultural equipment stampings, including tractor.....		(X)	34.2	(X)	22.0
34612 25	Electrical appliance stampings (except refrigeration and laundry equipment).....		(X)	53.9	(X)	56.9
34612 31	Furniture stampings.....		(X)	14.9	(X)	16.4
34612 41	Office machine stampings.....		(X)	42.2	(X)	25.5
34612 51	Radio and television stampings.....		(X)	126.8	(X)	91.4
34612 61	Refrigerator stampings.....		(X)	55.3	(X)	52.1
34612 71	Stove, heater, and air-conditioner stampings.....		(X)	38.7	(X)	29.1
34612 84	Laundry equipment stampings.....		(X)	8.8	(X)	16.7
34612 98	Other job stampings.....		(X)	470.1	(X)	388.4
34612 00	Job stampings, except automotive, n.s.k.....		(X)	55.2	(X)	38.5
34613 13	Automotive job stampings (truck, bus, and passenger car) <sup>2</sup> .....		(X)	3,154.3	(X)	2,548.0
34614 --	Stamped and spun utensils, cooking and kitchen, aluminum, total.....		(X)	150.1	(X)	95.7
34614 13	Top of range utensils.....	Million units.	<sup>e</sup> 164.8	104.3	(NA)	88.2
34614 15	Bakeware, pastryware and miscellaneous household utensils.....	do.....	(NA)	28.4		
34614 21	Commercial and hospital.....	do.....	<sup>e</sup> 6.0	15.1	(NA)	7.5
34614 00	Stamped and spun utensils, aluminum, n.s.k.....		(X)	2.3	-	-
34615 --	Stamped and spun utensils, cooking and kitchen, except aluminum, total.....		(X)	141.5	(X)	134.3
	Stainless steel:					
34615 03	Top of range utensils.....	Million units.	<sup>e</sup> 24.8	48.9	(X)	54.6
34615 05	Bakeware, pastryware and miscellaneous household utensils.....	do.....	<sup>e</sup> 82.8	37.1		
34615 12	Commercial and hospital.....	do.....	(NA)	21.3	(X)	17.9
	Tinware:					
34615 23	Household.....	do.....	34.5	16.2	(X)	26.7
34615 25	Commercial.....	do.....				
34615 98	Other metal.....	do.....	(X)	13.8	(X)	27.9
34615 00	Stamped and spun utensils, cooking and kitchen, except aluminum, n.s.k.....		(X)	4.2	(X)	7.1
34616 --	Metal commercial closures and metal home canning closures, except crowns, total.....		(X)	204.6	(X)	161.5
34616 10	Metal commercial closures and home canning closures, except milk bottle closures:					
	As reported in the census of manufactures.....	Million units.	(NA)	200.8	16,991.3	134.5
	As reported on monthly form M34H <sup>4</sup> .....	do.....	17,440.4	(NA)	16,849.8	(NA)
34616 51	Milk bottle closures (aluminum and tin mill only).....		(X)	3.8	(X)	13.4
34616 00	Metal commercial closures and metal home canning goods, n.s.k.....					
34617 --	Metal crowns:					
	As reported in the census of manufactures.....		(X)	85.4	319.3	82.0
	As reported on monthly form M34H <sup>4</sup> .....	Million gross.	326.7	(NA)	315.8	(NA)
34618 --	Other stamped and pressed metal end products, total.....		(X)	382.8	(X)	237.1
34618 59	Perforated metal end products.....		(X)	44.2	(X)	17.0
	Pails, ash cans, garbage cans, tubs, etc., excluding shipping containers:					
34618 61	Galvanized steel.....		(X)	44.1	(X)	39.7
34618 69	Other metal, including other grades of steel.....		(X)	17.7	(X)	10.7
34618 71	Electronic enclosures (stamped and/or pressed).....		(X)	42.8	(X)	161.7
34618 98	Other stamped and pressed metal end products.....		(X)	216.7		
34618 00	Other stamped and pressed metal end products, n.s.k.....		(X)	17.3	(X)	8.0
34610 00	Metal stampings, n.s.k. (For establishments with 10 or more employees. See note.).....		(X)	210.7	(X)	98.1
34610 02	Metal stampings, n.s.k. (For establishments with fewer than 10 employees.).....		(X)	32.3		

See footnotes on next page.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

FOOTNOTES FOR TABLE 3--INDUSTRY 3461

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

- Represents zero. <sup>e</sup>From 10 to 30 percent of this figure is estimated. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable. <sup>1</sup>Data are limited to vitreous-enameled products produced from materials owned by the producing company. Data do not include the value of receipts for enameled work done on materials owned by others (enameled products for the trade).

<sup>2</sup>"Job stampings" are mainly parts which are sold to other manufacturers for incorporation into their own products. Job stampings may be made from materials owned by the customer. These figures represent only those stampings made from materials owned by the establishment performing the stamping operation.

<sup>3</sup>Data for automotive job stampings for 1963 have been revised to include the output of the automotive stampings plants operated by automobile producing companies. The products for most of these plants had been classified as automotive parts.

<sup>4</sup>See Current Industrial Reports Series M34H, Closures for Containers, for detail product data.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3461.--METAL STAMPINGS					
	Materials, parts, containers, and supplies, total.....		(X)	2,596.9	(X)	<sup>1</sup> 2,076.8
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons	144.7	33.6	111.7	19.0
331012	Sheet and strip.....	..do.....	8,122.5	1,288.8	<sup>1</sup> 7,323.2	<sup>1</sup> 1,079.4
331013	Plates.....	..do.....	133.0	19.7	106.3	15.0
331015	Structural shapes.....	..do.....	9.6	2.9	14.5	2.9
331017	Wire and wire products.....	..do.....	73.7	15.3	<sup>1</sup> 51.2	<sup>1</sup> 9.9
331018	Tinplate, terne plate, and black plate.....	..do.....	463.8	93.1	457.2	89.2
331019	All other carbon steel mill shapes and forms.....	..do.....	<sup>2</sup> 37.8	<sup>2</sup> 8.4	35.2	7.4
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	..do.....	11.5	4.6	4.6	3.0
331029	All other alloy steel mill shapes and forms.....	..do.....	143.1	34.4	95.2	24.0
331031	Stainless steel.....	..do.....	85.2	96.4	67.0	74.0
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction).....	Million lbs....	4.0	3.7	2.1	1.2
335102	Rod, bar, and mechanical wire.....	..do.....	6.7	3.7	19.0	7.7
335123	Plate, sheet, and strip.....	..do.....	35.4	28.1	62.6	33.9
335127	Pipe and tube.....	..do.....	( <sup>3</sup> )	( <sup>3</sup> )	3.5	2.9
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	..do.....	251.1	117.7	212.4	92.3
335205	Extruded shapes.....	..do.....	36.2	19.3	24.4	12.1
335209	All other aluminum mill shapes and forms.....	..do.....	5.6	2.9	9.8	4.6
333348	Zinc and zinc-base alloy refinery shapes.....	1,000 short tons	10.3	3.3	12.1	3.5
	Castings (rough and semifinished): <sup>4</sup>					
332011	Iron (gray and malleable).....	..do.....	( <sup>5</sup> )	( <sup>5</sup> )	<sup>1</sup> 32.4	<sup>1</sup> 9.7
336100	Aluminum and aluminum-base alloy.....	Million lbs....	10.7	6.2	1.4	1.1
336200	Copper and copper-base alloy.....	..do.....	22.8	16.9	1.8	0.9
282140	Thermosetting resins.....	Million lbs. dry basis.....	9.9	2.9	43.2	7.7
282130	Thermoplastic resins.....	..do.....	55.4	13.6	47.4	9.5
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	570.3	(X)	<sup>1</sup> 455.9
976000	Materials, parts, containers, and supplies, n.s.k. <sup>6</sup> .....		(X)	211.1	(X)	109.1

(X) Not applicable.

<sup>1</sup>Data for these materials have been revised to include the consumption of materials by automotive stampings plants operated by automobile producing companies. Most of these plants had previously been classified in the automotive industry.

<sup>2</sup>These figures are understated by \$5 million or less because of apparent undercoverage of carbon steel pipe and tube.

<sup>3</sup>Included with material code 970099 "All other materials and components, etc."

<sup>4</sup>No data are available for the quantities of castings produced and consumed in the same establishment.

<sup>5</sup>Data are included with material code 970099 "All other materials and components, etc., to avoid disclosing the operations of individual companies.

<sup>6</sup>Not specified by kind.

## SCOPE AND COVERAGE

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As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

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More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

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# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



OFFICIAL BUSINESS

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

# 1967 CENSUS OF MANUFACTURES

## INDUSTRY SERIES

### Plating and polishing

SIC Code 3471

preliminary  
report

The Electroplating, Plating, Polishing, Anodizing, and Coloring Industry includes establishments primarily engaged in all types of electroplating, plating, anodizing, coloring, and finishing of metals and formed products for the trade. Most of the work done in this industry is done on materials owned by others.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classi-

fied in the Plating and Polishing Industry amounted to \$790 million, an increase of 53 percent compared with 1963. Value added by manufacture at \$575 million in 1967 was 55 percent more than value added in 1963. Average employment in the industry showed an increase of 22 percent from 1963 to a total of 55 thousand employees in 1967.

Of the \$790 million total value of shipments and other receipts of establishments classified as plating and polishing, \$18 million were products primary to other industries; and \$11 million were receipts for miscellaneous activities.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3471.—PLATING AND POLISHING														
1967 Census....	3,235	853	54.7	320.8	46.5	91.8	237.2	574.8	216.7	789.8	32.8	36.9	( <sup>4</sup> )	( <sup>4</sup> )
1966 ASM <sup>1</sup> .....	(NA)	(NA)	51.1	296.2	43.4	91.4	219.5	509.9	199.5	719.8	40.2	33.3	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	48.0	261.9	40.5	83.3	193.7	444.6	173.2	630.9	26.8	26.1	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	45.4	239.1	37.8	75.6	177.5	395.4	165.8	559.6	*24.1	24.4	(NA)	(NA)
1963 Census....	3,023	677	45.0	223.5	37.7	74.8	169.6	370.2	148.3	517.6	20.0	22.1	( <sup>4</sup> )	( <sup>4</sup> )
1962 ASM <sup>1</sup> .....	(NA)	(NA)	49.2	231.5	41.6	80.4	182.0	401.2	147.9	549.1	25.5	20.9	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	43.9	200.5	37.1	71.6	161.3	330.9	128.3	458.7	*16.2	20.4	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	44.2	200.0	38.1	72.6	161.5	337.0	128.3	465.1	19.1	20.5	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	43.3	189.5	37.2	72.0	142.3	325.8	127.3	451.3	15.2	21.3	(NA)	(NA)
1958 Census <sup>2</sup> ...	2,646	542	36.5	156.3	30.5	59.1	117.7	253.8	106.1	359.1	15.9	23.5	( <sup>4</sup> )	( <sup>4</sup> )

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 2 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

<sup>3</sup>Some small establishments in this industry may have been misclassified as to industry. This does not significantly affect the statistics other than the number of establishments (See section of text on scope and coverage for further explanation).

<sup>4</sup>Relationships are not meaningful because of the predominance of miscellaneous receipts, particularly receipts for contract and commission work on materials owned by others.

Issued August 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents



U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary  
Rocco C. Siciliano, Under Secretary  
William H. Chartener, Assistant Secretary for Economic Affairs  
BUREAU OF THE CENSUS A. Ross Eckler, Director



## 1967 CENSUS OF MANUFACTURES

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3471.—PLATING AND POLISHING													
United States total.....	13,235	853	54.7	320.8	46.5	91.8	237.2	574.8	216.7	789.8	32.8	45.0	370.2
New England.....	367	96	6.3	38.2	5.4	10.8	27.5	68.7	21.8	90.1	4.5	5.3	38.7
Massachusetts.....	133	37	2.2	13.0	1.8	3.5	9.3	22.4	7.2	29.5	0.9	1.9	13.4
Connecticut.....	120	38	2.6	17.5	2.2	4.6	12.1	34.2	10.3	44.1	3.1	2.0	17.5
Middle Atlantic.....	680	168	10.3	57.9	8.9	17.4	43.0	105.5	41.3	146.7	6.0	9.0	72.4
New York.....	398	99	6.3	34.7	5.4	10.8	25.3	61.5	22.0	83.4	3.3	5.4	41.1
New Jersey.....	154	37	2.0	11.8	1.7	3.3	8.8	24.0	10.3	34.3	0.9	1.9	16.0
Pennsylvania.....	128	32	2.0	11.4	1.7	3.2	8.8	20.0	8.9	28.9	1.8	1.6	15.4
East North Central....	1,098	321	20.6	123.2	17.4	34.4	91.1	216.8	90.1	306.2	13.1	17.9	152.7
Ohio.....	269	78	4.7	28.2	3.9	7.9	20.5	49.9	20.1	69.9	3.1	4.1	34.4
Indiana.....	85	31	1.8	10.6	1.5	2.9	7.5	20.7	5.9	26.6	1.2	1.6	15.4
Illinois.....	299	102	6.4	39.4	5.4	10.8	28.8	69.3	28.6	97.8	4.4	5.4	46.4
Michigan.....	372	90	6.4	37.2	5.6	10.7	28.5	63.3	28.3	91.1	2.8	6.0	49.3
Wisconsin.....	73	20	1.3	7.9	1.1	2.1	5.7	13.6	7.2	20.8	1.5	0.9	7.2
West North Central....	129	33	2.4	14.7	2.0	3.9	10.6	26.5	8.3	34.8	1.2	2.0	17.5
Minnesota.....	36	13	0.9	6.6	0.8	1.6	4.8	11.6	4.0	15.5	0.4	0.6	6.4
Missouri.....	60	12	1.0	5.8	0.9	1.7	4.0	10.2	3.1	13.3	0.5	1.0	8.5
Kansas.....	15	3	0.2	1.1	0.1	0.3	0.8	2.4	0.6	3.0	(D)	0.1	0.2
South Atlantic.....	157	32	2.9	15.7	2.4	4.8	11.4	28.5	12.1	40.6	1.5	1.8	12.5
Maryland.....	23	4	0.2	1.3	0.2	0.3	1.0	3.0	3.2	6.2	0.1	0.1	0.8
West Virginia.....	8	2	0.1	0.8	0.1	0.2	0.6	1.3	0.6	1.9	0.1	(D)	(D)
Florida.....	56	8	1.2	6.7	0.9	1.9	4.6	12.6	4.0	16.5	0.5	0.4	3.1
East South Central....	67	21	1.2	5.1	1.0	2.0	4.1	8.7	3.0	11.7	0.4	0.6	4.6
Alabama.....	12	2	0.1	0.6	0.1	0.2	0.5	0.9	0.4	1.3	(D)	(D)	(D)
Mississippi.....	5	2	0.1	0.4	0.1	0.1	0.3	0.7	0.1	0.8	(D)	(D)	(D)
West South Central....	138	32	1.8	10.2	1.5	3.1	7.7	20.5	7.2	27.7	1.2	1.2	9.5
Oklahoma.....	30	6	0.4	2.3	0.4	0.6	1.6	5.0	1.2	6.3	0.2	0.3	1.8
Texas.....	94	24	1.2	7.2	1.1	2.2	5.4	14.1	5.4	19.4	(D)	0.8	6.7
Mountain.....	51	13	0.7	3.7	0.6	1.1	2.7	6.5	1.9	8.4	0.3	0.5	4.1
Colorado.....	16	5	0.2	1.1	0.2	0.3	0.7	2.3	0.6	2.9	(D)	0.1	1.1
Arizona.....	17	5	0.3	1.7	0.2	0.5	1.2	2.5	0.8	3.3	0.1	0.2	1.9
Pacific.....	548	137	8.5	52.1	7.2	14.3	39.2	92.9	30.9	123.6	4.5	6.7	58.2
Washington.....	22	5	0.3	1.8	0.2	0.4	1.4	3.1	1.5	4.7	(D)	0.2	2.4
Oregon.....	18	4	0.3	1.7	0.3	0.5	1.4	2.6	0.7	3.4	0.1	0.2	1.1
California.....	502	127	7.9	48.2	6.7	13.4	36.2	86.8	28.2	114.9	(D)	6.3	54.6
Hawaii.....	6	1	0.1	0.3	-	0.1	0.2	0.3	0.4	0.7	(D)	(D)	(D)

Note: Only those regions, divisions, or States are listed that could be shown without disclosing the operations of individual companies, either directly or by subtraction from higher-level totals. Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

<sup>1</sup>Some small establishments in this industry may have been misclassified as to industry. This does not significantly affect the statistics other than the number of establishments (See section of text on scope and coverage for further explanation).

TABLE 3. Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total value of shipments including interplant transfers <sup>1</sup> (million dollars)	
		1967	1963
34710 11	Electroplating, plating, and polishing.....	761.0	501.9

<sup>1</sup>Value consists principally of receipts for work done on materials owned by others. The value represents only work done by establishments classified in industry 3471.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(Not applicable to this report)



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This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3471, these small establishments accounted for approximately 6 percent of payrolls and 7 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

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**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

**Textile mill products • Apparel and leather • Chemicals, rubber, and plastics • Machinery and equipment • Primary metals • Intermediate metal products • Processed foods • Lumber, furniture, and paper products • Stone, clay, and glass products.**

A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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# 1967 CENSUS OF MANUFACTURES

INDUSTRY SERIES

## Metal coating and allied services

SIC Code 3479

preliminary  
report

The Coating, Engraving, and Allied Services, Not Elsewhere Classified, Industry includes establishments primarily engaged in performing the following types of services on metals: (1) enameling, lacquering, and varnishing metal products for the trade; (2) hot dip galvanizing of mill sheets, plates and bars, castings, and formed products fabricated of iron and steel; in hot dip coating such items with aluminum, lead, or zinc; in retinning cans and utensils; (3) in engraving, chasing, and etching jewelry, silverware, notarial and other seals, and other metal products for the trade and for job contracting for purposes other than printing; (4) and other metal services, not elsewhere classified. Establishments primarily engaged in electroplating,

plating, polishing, anodizing, coloring, and finishing of metals and formed products for the trade are classified in industry 3471; and those producing porcelain enameled products in industry 3461.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Metal Coating and Allied Services Industry amounted to \$466 million, an increase of 44 percent compared with 1963. Value added

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)
INDUSTRY 3479.--METAL COATING AND ALLIED SERVICES														
1967 Census....	1,439	346	26.2	157.0	22.4	44.8	115.9	287.0	181.7	465.8	21.6	35.0	( <sup>4</sup> )	( <sup>4</sup> )
1966 ASM <sup>1</sup> .....	(NA)	(NA)	25.2	145.0	21.1	42.3	103.8	270.6	201.1	469.1	17.9	37.7	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	21.1	119.5	17.8	35.4	86.0	214.6	185.2	399.2	13.0	34.8	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	22.0	118.5	18.3	37.9	87.1	223.5	141.6	361.1	*10.4	27.3	(NA)	(NA)
1963 Census....	1,258	276	20.7	107.1	17.1	35.0	79.1	184.5	137.2	322.1	8.7	27.4	( <sup>4</sup> )	( <sup>4</sup> )
1962 ASM <sup>1</sup> .....	(NA)	(NA)	20.1	95.6	16.3	32.7	67.4	166.3	132.1	295.4	*10.6	25.1	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	18.5	85.2	15.5	31.3	61.4	143.8	96.5	241.1	*8.5	20.7	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	18.9	83.4	15.8	33.5	60.8	148.4	108.4	254.8	6.5	20.9	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	18.4	79.9	15.4	31.2	59.2	137.4	106.0	244.9	6.2	21.4	(NA)	(NA)
1958 Census <sup>2</sup> ...	1,003	192	15.7	68.0	12.9	25.2	50.0	108.4	88.8	196.4	4.7	21.4	( <sup>4</sup> )	( <sup>4</sup> )

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 5 and 4, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

<sup>3</sup>Some of the small establishments in this industry may have been misclassified as to industry. This does not significantly affect the statistics other than the number of establishments (See section of text on scope and coverage for further explanation).

<sup>4</sup>Relationships are not meaningful because of the predominance of miscellaneous receipts, particularly the receipts for contract and commission work on materials owned by others.

Issued August 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents



U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

William H. Chartener, Assistant Secretary for Economic Affairs

BUREAU OF THE CENSUS A. Ross Eckler, Director

by manufacture at \$287 million in 1967 was 73 percent more than value added in 1963. Average employment in the industry showed an increase of 26 percent from 1963 to a total of 26.2 thousand employees in 1967.

metal coating and allied services, \$16 million were products primary to other industries; and \$9 million were receipts for miscellaneous activities.

Of the \$466 million total value of shipments and other receipts of establishments classified as

For an explanation of the terms used in the tables, see appendix at the end of this report.

1967 CENSUS OF MANUFACTURES  
TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967										1963		
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
INDUSTRY 3479.--METAL COATING AND ALLIED SERVICES													
United States, Total.....	1,439	346	26.2	157.0	22.4	44.8	115.9	287.0	181.7	465.8	21.6	20.7	184.5
New England.....	156	27	1.8	10.1	1.5	2.9	6.9	17.1	8.5	25.5	0.7	1.7	12.8
Massachusetts.....	78	17	1.0	5.5	0.8	1.7	4.0	9.0	3.3	12.2	0.4	1.0	8.3
Connecticut.....	24	4	0.3	2.4	0.3	0.5	1.3	4.4	3.1	7.5	0.2	(D)	(D)
Middle Atlantic.....	354	69	5.4	31.6	4.7	9.2	23.4	59.1	39.2	96.6	4.8	5.2	43.4
New York.....	196	30	2.1	11.7	1.8	3.5	8.9	19.8	7.2	26.9	0.6	2.1	15.8
New Jersey.....	89	19	1.6	9.2	1.4	2.7	6.3	17.5	8.4	25.8	1.7	1.4	11.2
Pennsylvania.....	69	20	1.7	10.7	1.5	3.0	8.2	21.8	23.6	43.9	2.5	1.7	16.3
North Central.....	441	141	11.4	70.7	9.5	19.2	51.4	127.8	86.6	213.3	8.4	8.7	82.3
Ohio.....	92	29	2.5	17.5	2.1	4.4	13.1	30.7	21.8	51.9	1.4	(D)	(D)
Illinois.....	134	48	3.8	26.1	3.1	6.4	18.4	46.1	41.5	87.4	2.6	3.1	31.3
Wisconsin.....	22	6	0.5	2.6	0.4	0.9	2.0	4.3	3.0	7.3	(D)	(D)	(D)
Minnesota.....	17	4	0.3	1.8	0.3	0.5	1.3	3.3	1.3	4.6	0.1	0.2	1.7
South Atlantic.....	68	13	1.0	5.6	0.8	1.7	4.2	9.6	9.8	19.3	0.5	1.0	8.5
Maryland.....	14	4	0.3	1.7	0.3	0.5	1.5	3.0	2.1	5.1	0.1	0.5	4.6
Florida.....	25	3	0.2	0.9	0.1	0.3	0.7	1.7	0.9	2.7	0.2	0.1	1.2
East South Central....	29	9	0.9	3.8	0.8	1.7	3.3	7.4	4.5	11.7	0.6	0.5	3.6
Alabama.....	10	4	0.3	1.5	0.3	0.6	1.3	2.9	2.5	5.4	0.2	(D)	(D)
West South Central....	86	33	2.1	11.4	1.9	4.1	9.4	24.4	11.4	35.6	1.1	1.0	9.1
Louisiana.....	12	7	0.4	2.8	0.4	0.9	2.1	6.5	3.6	10.0	(D)	(D)	(D)
Oklahoma.....	9	5	0.3	1.6	0.2	0.5	1.3	2.8	1.4	4.2	0.1	0.1	0.4
Texas.....	65	21	1.4	7.1	1.3	2.7	6.0	15.1	6.4	21.4	(D)	0.7	3.0
Mountain.....	22	2	0.2	0.8	0.1	0.3	0.7	1.5	0.4	2.0	(Z)	0.1	0.6
Colorado.....	10	1	0.1	0.3	0.1	0.1	0.2	0.6	0.2	0.8	(D)	0.1	0.6
Arizona.....	7	1	0.1	0.4	0.1	0.1	0.3	0.7	0.1	0.8	(Z)	(D)	(D)
Pacific.....	283	52	3.4	22.9	2.9	5.8	16.6	40.2	21.3	61.8	5.5	2.5	23.4
Washington.....	16	2	0.1	0.8	0.1	0.2	0.7	1.7	0.6	2.3	(D)	(D)	(D)
Oregon.....	15	1	0.1	0.3	0.1	0.1	0.3	0.9	0.2	1.0	(D)	(D)	(D)
California.....	252	49	3.3	21.7	2.8	5.5	15.6	37.6	20.6	58.5	(D)	2.3	22.9

Note: Only those regions, divisions, or States are listed that could be shown without disclosing the operations of individual companies, either directly or by subtraction from higher-level totals. Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$500 thousand.

Some of the small establishments in this industry may have been misclassified as to industry. This does not significantly affect the statistics other than the number of establishments (See section of text on scope and coverage for further explanation).

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total value of shipments including interplant transfers (million dollars)	
		1967	1963
3479- --	METAL COATING AND ALLIED SERVICES, TOTAL.....	<sup>1</sup> 439.8	<sup>2</sup> 286.5
34790 13	Etching and engraving metal nameplates.....	46.5	37.5
34790 19	Other engraving.....	8.0	
34790 31	Galvanizing and other hot dip coating.....	60.0	52.6
	Organic coatings, enamels, lacquers including alkydes, vinyls, acrylics, plastisols, etc.:		
34790 61	Coil coating.....	106.0	140.1
34790 71	Spray coating, including electrostatic coating.....	54.2	
34790 81	All other, including curtain coating, wash coating, etc.....	35.9	
34790 00	Metal coating and allied services, n.s.k. (Represents principally establishments with 10 employees or more in 1967. See Note.).....	104.4	56.4
34790 02	Metal coating and allied services, n.s.k. (Represents principally establishments with fewer than 10 employees in 1967. See Note.).....	24.8	

Note: In the 1967 Census of Manufactures, data for establishments, of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind.

<sup>1</sup>Value consists principally of receipts for work done on materials owned by others. The value represents only work done by establishments classified in industry 3479.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(Not applicable to this report)



## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3479, these small establishments accounted for approximately 5 percent of payrolls and 6 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.

# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

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**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





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# 1967 CENSUS OF MANUFACTURES

INDUSTRY SERIES

## Miscellaneous fabricated wire products

SIC Code 3481

preliminary  
report

The Miscellaneous Fabricated Wire Products Industry includes establishments primarily engaged in manufacturing miscellaneous fabricated wire products from purchased wire. Rolling mills engaged in manufacturing wire products are classified in Major Group 33; establishments manufacturing nonferrous wire nails and spikes in industry 3399; those drawing and insulating nonferrous wire in industry 3357; and those assembling wire bedsprings or seats are classified in Major Group 25.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Miscellaneous Fabricated Wire Products Industry amounted to \$1,244.3 million, an increase of 21 percent compared with 1963. Value added by manufacture at \$685.0 million in 1967 was 27 percent more than value added in 1963. Average employment in the industry showed an increase of 10 percent from 1963 to a total of 61.2 thousand employees in 1967.

Of the \$1,244.3 million total value of shipments and other receipts of establishments classified as miscellaneous fabricated wire products, \$102.6 million were products primary to other industries; and \$48.9 million were receipts for miscellaneous activities. The industry shipments of primary

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (per-cent)	Coverage ratio (per-cent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3481.—MISCELLANEOUS FABRICATED WIRE PRODUCTS														
1967 Census....	1,555	616	61.2	369.8	50.2	100.9	262.0	685.0	561.2	1,244.3	38.9	177.3	91	61
1966 ASM <sup>1</sup> .....	(NA)	(NA)	64.6	386.4	53.3	111.0	274.8	710.2	596.8	1,299.9	43.3	186.7	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	59.3	342.3	49.1	100.4	244.3	633.1	553.4	1,178.0	30.3	180.2	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	59.9	331.5	48.8	100.7	238.3	586.8	530.8	1,108.8	26.9	167.4	(NA)	(NA)
1963 Census....	1,567	557	55.5	297.6	45.1	92.1	213.3	539.1	490.9	1,030.9	24.8	150.7	93	65
1962 ASM <sup>1</sup> .....	(NA)	(NA)	60.4	325.6	48.4	100.6	226.6	561.4	512.3	1,067.8	32.5	152.2	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	57.4	300.3	45.8	94.9	208.1	510.5	472.3	983.6	22.5	142.9	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	60.9	307.2	48.9	99.5	218.0	518.9	494.4	1,016.4	28.7	140.3	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	60.7	308.9	49.3	103.4	222.7	535.3	520.5	1,053.0	24.9	144.2	(NA)	(NA)
1958 Census <sup>2</sup> ...	1,463	538	55.5	261.0	44.1	86.3	184.4	439.9	426.0	874.9	18.1	140.2	91	64

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 2 and 2, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued December 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

Harold C. Passer, Assistant Secretary for Economic Affairs

BUREAU OF THE CENSUS George Hay Brown, Director



products represented 91 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 93 percent in 1963.

The total value of miscellaneous fabricated wire products shipped by all producers in 1967 was \$1,804.0 million of which \$1,092.8 million, or 61 percent, were shipped by plants classified in industry 3481, Miscellaneous Fabricated Wire Products, while the remainder was shipped by

plants classified in other industries. This percent, called the coverage ratio, was 65 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employ-ees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3481.--MISCELLANEOUS FABRICATED WIRE PRODUCTS													
United States, total.....	1,555	616	61.2	369.8	50.2	100.9	262.0	685.0	561.2	1,244.3	38.9	55.5	539.1
New England.....	150	60	5.1	29.6	4.3	8.7	21.2	48.4	35.0	83.0	2.8	4.4	36.3
Massachusetts.....	57	22	1.6	8.6	1.3	2.6	5.9	15.0	12.7	27.9	1.2	1.5	12.8
Connecticut.....	70	37	3.4	20.4	2.8	5.8	14.8	32.5	21.5	53.3	1.5	2.6	21.4
Middle Atlantic.....	391	142	14.4	86.1	11.6	22.5	61.6	171.9	133.8	305.8	6.8	13.9	146.5
New York.....	198	71	5.1	27.8	4.1	7.8	20.0	51.2	36.8	88.0	3.0	4.7	41.0
New Jersey.....	84	26	2.7	16.7	2.1	4.4	12.0	33.3	23.6	56.7	1.0	2.9	35.9
Pennsylvania.....	109	45	6.6	41.5	5.3	10.3	29.7	87.4	73.4	161.1	2.9	6.3	69.6
East North Central....	438	211	23.5	153.1	19.3	39.5	108.3	259.5	211.4	470.7	11.9	21.9	203.2
Ohio.....	95	37	3.1	18.8	2.6	5.2	12.8	34.1	29.8	63.8	1.3	2.6	25.5
Indiana.....	56	33	3.5	19.5	3.0	5.6	14.2	35.6	28.9	64.5	1.3	3.1	27.2
Illinois.....	175	80	9.6	62.4	7.8	16.4	44.0	100.1	82.2	182.0	4.8	8.5	74.0
Michigan.....	88	51	6.4	45.9	5.3	10.7	32.7	78.6	62.5	141.0	3.5	6.8	69.3
Wisconsin.....	24	10	0.9	6.6	0.8	1.6	4.6	11.2	7.9	19.5	1.1	0.9	7.2
West North Central....	80	34	3.2	18.7	2.7	5.6	13.8	34.0	25.9	59.8	1.9	3.4	33.6
Minnesota.....	16	6	0.3	1.9	0.3	0.5	1.4	3.0	2.3	5.3	(D)	0.5	4.6
Iowa.....	9	4	0.5	2.6	0.4	0.8	2.0	4.4	3.1	7.4	(D)	0.6	4.7
Missouri.....	36	17	2.0	11.4	1.6	3.2	8.1	21.3	15.5	36.9	0.8	2.0	20.8
South Atlantic.....	89	32	3.7	18.6	3.0	5.8	12.6	43.8	41.2	84.5	4.4	3.0	28.4
Maryland.....	17	5	1.1	6.0	0.8	1.5	3.8	17.9	12.9	30.6	0.5	1.0	14.5
North Carolina.....	23	12	1.5	6.6	1.3	2.5	4.8	11.9	15.3	27.1	1.5	1.1	5.7
Georgia.....	11	5	0.2	1.2	0.2	0.3	0.7	2.2	2.9	5.1	0.1	(D)	(D)
East South Central....	51	28	2.9	14.7	2.4	5.0	10.0	34.9	28.4	62.3	5.5	2.4	26.1
Kentucky.....	13	7	1.2	6.6	1.0	2.1	4.5	16.5	12.0	28.2	(D)	(D)	(D)
Tennessee.....	15	10	1.0	4.6	0.8	1.6	2.8	8.4	8.2	16.1	(D)	0.8	6.4
Alabama.....	16	7	0.4	2.5	0.4	0.7	1.9	7.6	5.8	13.2	(D)	0.5	7.1
Mississippi.....	7	4	0.3	1.0	0.2	0.5	0.8	2.4	2.4	4.8	0.4	(D)	(D)
West South Central....	87	28	3.0	15.3	2.5	5.2	11.0	29.0	33.2	62.6	1.5	1.7	18.0
Texas.....	66	21	1.9	9.4	1.5	3.0	6.0	17.6	21.4	39.4	0.5	1.3	13.2
Mountain.....	30	6	0.4	2.1	0.3	0.6	1.4	4.1	3.9	8.0	0.3	0.3	2.6
Colorado.....	13	3	0.2	1.2	0.2	0.3	0.8	2.3	2.2	4.4	(D)	0.1	1.3
Pacific.....	239	75	5.0	31.7	4.0	8.0	22.0	59.4	48.4	107.6	3.7	4.6	44.4
Washington.....	22	8	0.4	2.0	0.3	0.6	1.4	5.1	3.8	8.9	0.5	0.3	3.2
California.....	195	61	4.3	27.8	3.5	6.9	19.3	49.8	41.2	90.9	2.8	4.1	39.6

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3481--	MISCELLANEOUS FABRICATED WIRE PRODUCTS, TOTAL.....		(X)	1,804.0	(X)	1,399.2
33151 -- 34811 --	Noninsulated ferrous wire rope, cable, and strand, total.....		(X)	222.3	(X)	189.9
33151 --	Made in industries 3312 (blast furnaces and steel mills) and 3315 (steel wire drawing).....		(X)	140.5	(X)	100.9
34811 --	Made in fabricated wire products, n.e.c. (industry 3481) and other industries.....		(X)	81.8	(X)	89.0
33151 11 34811 11	Iron and steel wire rope and cable.....	1,000 short tons.....	249.2	155.2	205.3	141.2
33151 11	Made in industries 3312 and 3315.....	do.....	145.8	78.0	105.4	67.8
34811 11	Made in industry 3481 and other industries.....	do.....	103.8	77.2	99.9	73.4
33151 21 34811 21	Composite strand, rope, and cable, including wire strands of different metals (except ACSR).....	do.....	24.5	21.4	69.5	28.0
33151 33 34811 33	Steel wire strand, except wire strand for prestressed concrete, including guard rail cable.....	do.....	68.1	25.3		
33151 35 34811 35	Wire strand for prestressed concrete.....	do.....	59.8	17.7	36.2	11.8
33151 00 34811 00	Noninsulated ferrous wire rope, cable, and strand, n.s.k.....		(X)	2.7	(X)	9.0
34812 --	Precision mechanical springs, total.....	1,000 short tons.....	(X)	212.4	118.1	150.0
34812 13	Compression type.....	do.....	80.5	115.2	118.1	150.0
34812 15	Extension type.....	do.....	37.1	49.5		
34812 17	Torsion type.....	do.....	16.1	28.1		
34812 00	Precision mechanical springs, n.s.k.....	do.....	(X)	19.6		
34813 --	Other wire springs, total.....		(X)	247.4	(X)	239.5
34813 11	Upholstery and furniture springs (unassembled): Seat and back springs for motor vehicles.....	1,000 short tons.....	186.9	114.4	185.4	99.1
34813 13	Springs for mattresses and bedsprings.....	do.....	56.0	18.0	61.0	22.8
34813 17	Spring units for box springs, innerspring mattresses and dual purpose sleep furniture.....	do.....	170.1	62.8	(NA)	33.1
34813 18	Spring units for upholstered furniture (unassembled).....	do.....	(NA)	12.6	(NA)	13.3
34813 19	Other upholstery and furniture springs.....	do.....	(NA)	11.5	(NA)	5.4
34813 98	Other wire springs.....	do.....	(NA)	23.1	(NA)	42.5
34813 00	Wire springs, n.s.k.....	do.....	(X)	5.0	(X)	23.3
33157 -- 34814 --	Ferrous wire cloth and other woven ferrous wire products, total.....		(X)	88.1	(X)	72.3
33157 --	Made in industries 3312 (blast furnaces and steel mills) and 3315 (steel wire drawing).....		(X)	38.4	(X)	24.3
34814 --	Made in fabricated wire products, n.e.c. (industry 3481) and other industries.....		(X)	49.7	(X)	48.0
33157 21 34814 11	Insect wire screening, steel, including stainless steel.....	Million sq.ft.	145.7	5.9	168.6	7.5
33157 31 34814 31	Hardware cloth.....	1,000 short tons.....	18.1	12.4	8.6	6.3
33157 61 34814 61	Industrial wire cloth, steel.....	Million sq.ft.	(NA)	147.6	(NA)	23.7
33157 61	Made in industries 3312 and 3315.....	do.....			(NA)	4.6
34814 61	Made in industry 3481 and other industries.....	do.....			25.9	19.1
33157 71 34814 71	Woven wire netting (poultry, fur farm, stucco, etc.).....	1,000 short tons.....	(1)	(1)	(NA)	13.6
33157 81 34814 81	Stainless steel paper machine wire cloth (fourdrinier and cylinder).....	Million sq.ft.	(X)	18.2	(X)	21.1
33157 98 34814 98	Other wire cloth and woven wire products including diamond cloth.....	do.....				
33157 00 34814 00	Wire cloth and woven wire products, n.s.k.....	do.....				
33575 -- 34815 --	Nonferrous wire cloth and other woven nonferrous wire products, total.....		(X)	90.1	(X)	70.5
33575 --	Made in industry 3357 (nonferrous wire drawing, etc.).....		(X)	36.2	(X)	21.2
34815 --	Made in fabricated wire products, n.e.c. (industry 3481) and other industries.....		(X)	53.9	(X)	49.3

See footnotes at end of table.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3481- --	MISCELLANEOUS FABRICATED WIRE PRODUCTS--Continued					
33575 --	Nonferrous wire cloth and other woven nonferrous wire products--Continued					
	Insect wire screening:					
33575 25	Aluminum.....	Million sq. ft.	472.1	21.4	459.1	21.2
34815 15	Made in industry 3357.....	do.....	351.1	14.1	188.1	7.3
33575 25	Made in industry 3481 and other industries.....	do.....	121.0	7.3	271.0	14.0
34815 15						
33575 29	All other nonferrous metal.....	do.....	56.1	1.6	(NA)	0.8
34815 19						
	Paper machine wire cloth (fourdrinier and cylinder):					
33575 53	Copper.....	do.....	26.8	43.4	24.6	36.6
34815 53						
33575 59	All other.....	do.....	5.3	5.9		
34815 59						
33575 65	Industrial wire cloth, nonferrous.....	do.....	17.5	14.4	12.5	8.8
34815 65						
33575 00	Nonferrous wire cloth and other woven nonferrous wire products, n.s.k.....		(X)	3.4	(X)	3.0
34815 00						
33156 --	Fencing and fence gates, total.....		(X)	130.3	(X)	115.5
34816 --						
33156 --	Made in industries 3312 (blast furnaces and steel mills) and 3315 (steel wire drawing).....		(X)	79.5	(X)	58.3
34816 --	Made in fabricated wire products, n.e.c. (industry 3481) and other industries.....		(X)	50.8	(X)	57.1
33156 13	Chain link fencing, excluding post, gates and fittings.....	1,000 short tons.....	(NA)	81.1	(NA)	37.5
34816 13						
33156 35	Fence gates, posts, and fittings.....	do.....	(NA)	41.4	125.9	38.5
34816 35						
33156 13, 35	Made in industries 3312 and 3315.....	do.....	(NA)	(NA)	(NA)	30.2
34816 13, 35	Made in industry 3481 and other industries.....	do.....	(NA)	(NA)	(NA)	45.7
33156 21	Wire fence, woven and welded.....	do.....			132.2	33.3
34816 21	Made in industries 3312 and 3315.....	do.....	(?)	(?)	109.7	26.3
33156 21	Made in industry 3481 and other industries.....	do.....			22.5	7.0
34816 21						
33156 71	Ornamental lawn fence.....	do.....	7.7	2.5	11.0	3.5
34816 71						
33156 71	Made in industries 3312 and 3315.....	do.....	7.2	2.0	5.8	1.8
34816 71	Made in industry 3481 and other industries.....	do.....	0.5	0.5	5.2	1.6
33156 00	Fencing and fence gates, n.s.k.....		(X)	5.3	(X)	2.8
34816 00						
33159 --	Other fabricated wire products, total.....		(X)	660.2	(X)	501.5
34819 --						
33159 --	Made in industries 3312 (blast furnaces and steel mills) and 3315 (steel wire drawing).....		(X)	285.8	(X)	181.6
34819 --	Made in fabricated wire products, n.e.c. (industry 3481) and other industries.....		(X)	374.4	(X)	320.0
	Wire chain:					
33159 41	Tire.....	1,000 short tons.....	44.6	38.6	20.9	14.8
34819 41						
33159 49	Other.....	do.....	68.0	48.6	61.5	44.7
34819 49						
33159 51	Barbed and twisted steel wire.....	do.....	165.7	34.6	110.6	20.3
34819 51						

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3481- --	MISCELLANEOUS FABRICATED WIRE PRODUCTS--Continued					
33159 --	Other fabricated wire products--Continued					
34819 --						
33159 55	Wire bale ties.....	1,000 short				
34819 55		tons.....	129.3	25.9	86.9	17.3
33159 55	Made in industries 3312 and 3315.....	do.....	108.1	20.4	73.2	13.9
34819 55	Made in industry 3481 and other industries.....	do.....	21.2	5.5	13.8	3.4
	Welded steel wire fabric:					
33159 61	Concrete reinforcing mesh.....	1,000 short				
34819 61		tons.....	678.8	115.7	542.7	94.2
33159 61	Made in industries 3312 and 3315.....	do.....	588.7	97.6	379.4	74.2
34819 61	Made in industry 3481 and other industries.....	do.....	90.1	18.1	107.3	20.0
33159 65	Other welded steel wire fabric.....	do.....	200.9	51.7	127.7	31.2
34819 65		do.....	183.5	38.3	116.7	27.3
33159 65	Made in industries 3312 and 3315.....	do.....	17.4	13.4	11.0	3.9
34819 65	Made in industry 3481 and other industries.....	do.....				
33159 71	Wire garment hangers.....	Million lbs....	254.1	39.3	161.4	25.7
34819 71						
33159 73	Wire carts, including household, grocery type and industrial..		(X)	19.2	(X)	15.0
34819 73						
33159 75	Steel wire cages.....		(X)	16.1	(X)	9.2
34819 75						
33159 77	Paper clips.....		(X)	3.2		
34819 77						
33159 98	Other wire products including baskets, guards, florists' designs, kitchenware, etc.....		(X)	238.4	(X)	211.3
34819 98						
33159 00	Other fabricated wire products, n.s.k.....		(X)	28.9	(X)	17.9
34819 00						
34810 00	Miscellaneous fabricated wire products, n.s.k. (For establishments with 10 or more employees, See Note.).....		(X)	126.2		
34810 02	Miscellaneous fabricated wire products, n.s.k. (For establishments with fewer than 10 employees, See Note.).....		(X)	27.0	(X)	60.0

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

<sup>e</sup>From 10 to 30 percent of this figure was estimated. (NA) Not available. n.e.c. Not elsewhere classified. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Woven wire netting has been combined with steel industrial wire data pending further review of data.

<sup>2</sup>Wire fence, woven and welded has been combined with chain link fencing pending further review of data.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3481.--MISCELLANEOUS FABRICATED WIRE PRODUCTS, N.E.C.					
	Materials, parts, containers, and supplies, total.....		(X)	486.2	(X)	433.7
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	36.0	6.8	30.5	5.4
331012	Sheet and strip.....	..do.....	97.3	22.5	137.1	24.8
331015	Structural shapes.....	..do.....	15.5	4.4	2.5	0.6
331017	Wire and wire products.....	..do.....	933.6	222.2	908.4	201.8
331019	All other carbon steel mill shapes and forms.....	..do.....	144.3	19.3	29.8	7.1
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	..do.....	15.9	4.5	14.1	3.3
331029	All other alloy steel mill shapes and forms.....	..do.....	6.4	4.3	7.2	4.2
331031	Stainless steel mill shapes and forms.....	..do.....	5.6	11.6	5.2	10.3
	Copper and copper-base alloy mill shapes and forms:					
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	9.3	6.8	7.0	4.5
335123	Plate, sheet, and strip (including military cups and discs).....	..do.....	1.5	1.7	2.0	1.5
335127	Pipe and tube.....	..do.....	(2)	(2)	1.3	1.0
	Aluminum and aluminum-base alloy mill shapes and forms:					
335202	Sheet, plate and foil.....	..do.....	2.3	1.0	6.2	1.9
335205	Extruded shapes (including extruded rod, bar, pipe, tube etc.).....	..do.....	1.2	0.4	6.9	2.1
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing etc.).....	..do.....	8.0	3.8	7.4	3.3
	Castings (rough and semifinished): <sup>3</sup>					
332300	Steel.....	1,000 short tons.	(D)	(D)	5.0	2.3
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	72.0	(X)	84.0
976000	Materials, parts, containers, etc., n.s.k. <sup>4</sup> .....		(X)	97.1	(X)	74.7

(D) Included with material code 970099, "all other materials and components, parts, containers, and supplies consumed," to avoid disclosing figures for individual companies. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>These figures are understated by \$5 million or less because of apparent under coverage of carbon steel pipe and tube.

<sup>2</sup>Included with material code 970099 "all other materials and components, etc."

<sup>3</sup>No data are available on the quantities of steel castings produced and consumed in the same establishment.

<sup>4</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3481, these small establishments accounted for approximately 2 percent of payrolls and 2 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.

# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--** All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--** This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--** The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--** In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--** The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

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A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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# 1967 CENSUS OF MANUFACTURES



MC67(P)-34E-2

MC67(P)-34E-3

## INDUSTRY SERIES

### Metal barrels, drums, and pails

SIC Code 3491

## preliminary report

The Metal Shipping Barrels, Drums, Kegs, and Pails Industry includes establishments primarily engaged in manufacturing ferrous and nonferrous shipping barrels, drums, kegs, and pails.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Metal Barrels, Drums, and Pails Industry amounted to \$369.5 million, an increase of 22 percent compared with 1963. Value added by manufacture at \$150.1 million in 1967 was 26

percent more than value added in 1963. Average employment in the industry showed an increase of 10 percent from 1963 to a total of 11.6 thousand employees in 1967.

Of the \$369.5 million total value of shipments and other receipts of establishments classified as metal barrels, drums, and pails manufacturers, \$28.7 million were products primary to other industries; and \$10.8 million were receipts for miscellaneous activities. The industry shipments of primary products represented 92 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was also 92 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3491.--METAL BARRELS, DRUMS, AND PAILS														
1967 Census....	149	95	11.6	83.2	9.1	19.4	59.8	150.1	220.8	369.5	15.3	56.9	92	88
1966 ASM <sup>1</sup> .....	(NA)	(NA)	11.9	81.3	9.7	19.9	58.4	146.2	214.6	361.7	11.1	57.2	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	11.0	73.9	9.0	18.2	53.1	140.6	208.0	347.0	6.7	60.8	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	10.5	70.6	8.4	17.6	50.8	124.8	194.0	317.3	*7.5	54.9	(NA)	(NA)
1963 Census....	145	93	10.5	66.6	8.5	17.7	49.1	119.6	183.9	303.4	6.4	49.5	92	86
1962 ASM <sup>1</sup> .....	(NA)	(NA)	9.6	62.2	7.6	16.0	45.1	104.4	175.0	279.5	*5.6	43.6	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	9.2	55.5	7.3	14.8	39.9	97.2	158.5	257.1	4.1	44.4	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	9.8	55.6	7.8	14.9	39.0	93.6	163.2	256.3	5.7	43.8	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	*9.4	*54.8	*7.7	*15.3	*40.2	*105.7	*171.5	*277.6	*4.2	*37.7	(NA)	(NA)
1958 Census <sup>2</sup> ...	126	75	9.5	53.2	7.6	15.2	38.8	96.2	153.1	250.3	5.3	46.5	92	86

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 6 and 3, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director



The total value of metal barrels, drums, and pails shipped by all producers in 1967 was \$373.6 million of which \$330.0 million, or 88 percent, were shipped by plants classified in industry 3491, Metal Barrels, Drums, and Pails, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 86 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3491, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

M34K, Steel Shipping Barrels, Drums, and Pails.

Data in this monthly report are shown for pails and drums, by lining, capacity, and end use.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)						
INDUSTRY 3491.--METAL BARRELS, DRUMS, AND PAILS													
United States, total.....	149	95	11.6	83.2	9.1	19.4	59.8	150.1	220.8	369.5	15.3	10.5	119.6
Northeast.....	38	24	2.4	17.4	1.9	4.1	12.4	32.5	49.9	82.5	2.1	3.1	36.5
New Jersey.....	14	11	1.6	12.1	1.3	2.7	8.5	21.9	33.2	55.0	1.4	1.9	23.4
East North Central....	42	30	4.3	33.0	3.4	7.4	23.3	50.1	74.6	124.5	9.9	(D)	(D)
Ohio.....	17	15	1.5	11.0	1.2	2.5	8.0	17.3	27.4	44.6	1.8	1.6	15.2
Illinois.....	17	12	2.3	19.1	1.8	4.2	13.3	26.9	42.7	69.4	7.5	2.1	27.1
West North Central....	7	4	0.3	1.6	0.2	0.5	1.4	3.3	5.4	8.7	0.3	(D)	(D)
South.....	38	25	2.5	16.9	2.1	4.4	12.7	34.3	58.8	92.9	2.0	1.8	22.2
Georgia.....	4	3	0.1	0.8	0.1	0.2	0.6	1.6	2.3	3.9	(Z)	(D)	(D)
Texas.....	9	6	0.7	5.1	0.6	1.1	3.7	12.0	19.0	30.9	(D)	0.7	8.8
West.....	24	12	2.0	14.3	1.5	3.0	10.0	30.0	32.1	60.9	1.0	1.1	9.1
California.....	19	11	1.9	13.7	1.4	2.9	9.5	28.9	30.1	57.7	(D)	1.0	8.4

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers	
		Quantity	Value
		(1,000 units)	(million dollars)
		1967	
3491- --	METAL BARRELS, DRUMS, AND PAILS, TOTAL.....	(X)	373.6
34911 --	Steel Shipping Pails (12 gallon capacity and under): <sup>1</sup>		
34911 00	Reported in Census of Manufactures.....	(X)	111.6
	Reported on Monthly Form M34K.....	87,674	(NA)
	By type of head construction:		
	Full removable head, total.....	66,825	(NA)
34911 21	Straight side.....	33,622	(NA)
	Tapered or semitapered:		
34911 22	11-1/4 inch diameter.....	21,919	(NA)
34911 23	All other diameters.....	11,284	(NA)
	Tight head, total.....	20,849	(NA)
34911 24	Standard.....	15,773	(NA)
34911 25	Stacking dome.....	3,158	(NA)
34911 26	Kerosene type.....	1,918	(NA)
	By type of lining:		
34911 31	Lined pails.....	27,088	(NA)
34911 30	Unlined pails.....	60,586	(NA)
	By capacity:		
34911 37	Capacities other than 5 gallon.....	22,472	(NA)
34911 39	5 gallon pails, total.....	65,202	(NA)
34911 41	24 gauge and heavier.....	15,340	(NA)
34911 42	26 gauge.....	28,560	(NA)
34911 43	28/26 gauge.....	9,495	(NA)
34911 44	28 gauge.....	3,383	(NA)
34911 45	29 gauge.....	8,424	(NA)
34912 --	Steel Shipping Barrels and Drums (over 12 gallon capacity): <sup>2</sup>		
34912 00	Reported in the Census of Manufactures.....	(X)	209.4
	Reported on Monthly Form M34K.....	33,325	(NA)
	By size (diameter):		
	14 inch diameter, all gauges, total.....	4,060	(NA)
34912 21	Tight head.....	676	(NA)
34912 22	Open head, full or partial.....	3,384	(NA)
	All other diameters, total.....	29,265	(NA)
	20 gauge and heavier, total.....	21,513	(NA)
	55 to 57 gallon:		
	18 gauge and heavier:		
34912 23	Tight head.....	10,053	(NA)
34912 24	Open head.....	2,410	(NA)
	20 gauge body with 18 gauge head:		
34912 25	Tight head.....	5,506	(NA)
34912 26	Open head.....	681	(NA)
34912 31	30 to 35 gallon tight head and full open head.....	1,984	(NA)
34912 29	All other capacities tight head and full open head, including 55 to 57 gallon, 20 gauge.	879	(NA)
	Lighter than 20 gauge, total.....	7,752	(NA)
	22 to 26 gauge, welded and lockside seam construction:		
34912 31	Tight head.....	5,296	(NA)
34912 32	Open head, full or partial.....		
34912 33	28 and 30 gauge, all types.....	2,456	(NA)
	By type of construction:		
34912 45	Unlined drums.....	27,778	(NA)
34912 40	Lined drums, total.....	5,547	(NA)
34912 41	14 inch diameter, all gauges.....	5,547	(NA)
34912 42	20 gauge and heavier, except 14 inch diameter.....		
34912 43	Lighter than 20 gauge, except 14 inch diameter.....		
34913 --	All other metal barrels, including beer barrels and fluid milk shipping containers.....	(X)	45.5
34913 13	Metal fluid milk shipping and delivery containers (except crates).....	(X)	45.5
34913 19	All other metal barrels, including parts for metal barrels and pails.....		
34910 00	Metal barrels, drums and pails, n.s.k. (Represents principally establishments with 10 or more employees. See Note.).....	(X)	6.0
34910 02	Metal barrels, drums and pails, n.s.k. (Represents principally establishments with fewer than 10 employees. See Note.).....	(X)	1.1

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers	
		Quantity (1,000 units)	Value (million dollars)
		1963	
3491- --	METAL BARRELS, DRUMS, AND PAILS, TOTAL.....	(X)	317.8
34911 --	Steel shipping pails (12 gallon capacity and under): <sup>1</sup>		
34911 11	Reported in census of manufactures.....	(X)	87.2
	Reported on Monthly Form M34K.....	79,073	(NA)
34911 15	Tapered pails, all capacities, all gauges.....	16,207	(NA)
34911 19	Dome top pails, all capacities, all gauges.....	4,606	(NA)
	Other types.....	58,260	(NA)
	For sale.....	55,307	(NA)
34911 21	1 to 2 gallon, all gauges.....	2,426	(NA)
34911 25	Over 2 gallon, up to but excluding 5 gallon, all gauges.....	3,196	(NA)
34911 29	5 gallon, 24 gauge and heavier.....	13,711	(NA)
34911 31	5 gallon, 26 gauge.....	24,190	(NA)
34911 35	5 gallon, 28 gauge and lighter.....	7,491	(NA)
34911 39	Over 5 gallon, up to and including 7 gallons, all gauges 11-1/4" diameter or less.....	2,711	(NA)
34911 41	7 gallon, up to and including 12 gallon, all gauges, all diameters over 11-1/4".....	1,582	(NA)
	For own use.....	2,953	(NA)
34911 21-35	1 to 5 gallon capacity.....	2,953	(NA)
34911 39	Over 5 gallon, up to and including 7 gallon, all gauges, 11-1/4" diameter or less.....		
34911 41	7 to 12 gallon capacity, diameter over 11-1/4".....		
34912 --	Steel shipping barrels and drums (over 12 gallon capacity): <sup>2</sup>		
34912 10	Reported in the census of manufactures.....	(X)	191.5
	Reported on Monthly Form M34K.....	32,297	(NA)
	Heavy type.....	20,057	(NA)
	Light head liquid type.....	16,860	(NA)
	55 gallon capacity:		
34912 11	16 gauge and heavier.....	484	(NA)
34912 15	18 gauge.....	10,311	(NA)
34912 21	19 gauge and lighter (except those with 20 gauge body and 18 gauge head).....	89	(NA)
34912 23	20 gauge body and 18 gauge head.....	3,713	(NA)
34912 25	30 to 33 gallon, all gauges.....	1,225	(NA)
34912 29	All other capacities, all gauges.....	1,038	(NA)
	Full open head type.....	3,196	(NA)
34912 31	55 gallon and larger, 18 gauge and heavier.....	2,135	(NA)
34912 35	19 and 20 gauge.....	168	(NA)
34912 39	All other capacities, 20 gauge and heavier.....	893	(NA)
	Light type (full open head or partial opening).....	9,234	(NA)
	For sale.....	8,557	(NA)
	Welded side seam construction.....	5,262	(NA)
34912 41	Over 30 gallon, 22 to 26 gauge.....	2,163	(NA)
34912 46	30 gallon and smaller, 22 to 26 gauge.....	2,057	(NA)
34912 47	All capacities, 28 to 30 gauge.....	1,042	(NA)
34912 51	Lock side seam construction.....	3,296	(NA)
34912 41-51	For own use.....	676	(NA)
34912 61	Grease drums.....	3,006	(NA)
34913 --	All other metal barrels, including beer barrels and fluid milk shipping containers.....	(X)	35.9
34913 12	All other metal barrels, including parts for metal barrels and pails.....	(X)	29.6
34913 31	Metal fluid milk shipping and delivery containers (except crates).....	(NA)	6.3
34910 00	Metal barrels, drums, and pails, n.s.k.....	(X)	3.3

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Steel shipping packages, kegs, and pails are defined as single-walled shipping containers with a range of capacity from 1 to 12 gallons inclusive, constructed of steel sheet of 29 gauge and heavier. This definition does not include tin cans (packers' cans, general line cans, and beer cans), terneplate oil containers, fluid milk shipping containers, ice cream cans, gas cylinders, beer barrels, reconditioned barrels and drums, or containers not commercially usable in the transportation of commodities.

<sup>2</sup>Steel shipping barrels and drums are defined as single-walled cylindrical or bilged shipping containers, with a range of capacity from 12 to 132 gallons, constructed of steel. This definition does not include tin cans (packers' cans, general line cans, and beer cans), terneplate oil containers, high and low pressure gas steel cylinders, fluid milk shipping containers, ice cream cans, or containers not commercially usable in the transportation of commodities.



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3491.--METAL BARRELS, DRUMS, AND PAILS					
	Materials, parts, containers, and supplies, total.....		(X)	211.0	(X)	176.0
	Mill shapes and forms (except castings):					
	Carbon steel:					
331012	Sheet and strip.....	1,000 short tons.	835.6	125.9	727.1	106.3
331018	Tin plate, terneplate and black plate.....	...do.....	59.5	9.7	38.2	5.6
331017	Wire and wire products.....	...do.....			10.8	1.8
331011	Bar and bar shapes.....	...do.....			3.5	0.5
331019	All other carbon steel mill shapes and forms.....	...do.....	48.5	8.5	27.8	4.3
331020	Alloy steel (except stainless).....	...do.....				
331031	Stainless steel mill shapes and forms.....	...do.....			4.2	3.0
	Aluminum and aluminum-base alloy:					
335202	Sheet plate and foil.....	Million pounds...				
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, extruded shapes, etc.).....	...do.....	4.3	2.4	(NA)	(NA)
285101	Paints, varnishes, lacquers, japans and enamels, etc.....	1,000 gallons....	3,430.3	11.0	(NA)	(NA)
260091	Paper and paperboard containers, including corrugated boxes....		(X)	1.1	(NA)	(NA)
970000	All other materials and components, parts, containers, and supplies consumed.....		(X)	46.5	(X)	45.7
973000	Materials, components, parts, containers, etc., n.s.k. <sup>1</sup> .....		(X)	5.9	(X)	8.7

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3491, these small establishments accounted for less than 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

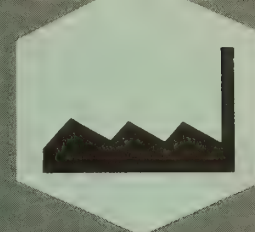
**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# 1967 CENSUS OF MANUFACTURES



MC67(P)-34E-3

MC67(P)-34E-3

## INDUSTRY SERIES

**preliminary  
report**

### Safes and vaults

SIC Code 3492

The Safes and Vaults Industry includes establishments primarily engaged in manufacturing fire or burglary resistive steel safes and vaults (except concrete grave vaults, industry 3272, and metal grave vaults, industry 3994), and similar fire or burglary resistive products.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Safes and Vaults Industry amounted to \$98.7 million, an increase of 27 percent compared with 1963. Value added by manufacture at \$67.1 million in 1967 was 19 percent more than value

added in 1963. Average employment in the industry showed an increase of 15 percent from 1963 to a total of 3.8 thousand employees in 1967.

Total value of shipments and other receipts of establishments classified as safes and vaults was 98.7 million. The industry shipments of primary products represented 84 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 81 percent in 1963.

The total value of safes and vaults shipped by all producers in 1967 was \$79.5 million. Between 85 and 90 percent of this total was shipped by plants classified in industry 3492, Safes and Vaults, while the remainder was shipped by plants classified in other industries. This percent,

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)							
INDUSTRY 3492.--SAFES AND VAULTS														
1967 Census....	32	18	3.8	26.6	2.6	4.9	16.4	67.1	33.5	98.7	3.1	21.4	84	85-90
1966 ASM <sup>1</sup> .....	(NA)	(NA)	3.6	25.1	2.4	4.8	16.0	64.4	28.7	91.8	2.7	18.2	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	3.5	23.1	2.3	4.8	14.9	59.0	27.5	86.6	*3.4	16.4	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	3.3	22.5	2.2	4.7	13.9	56.5	25.6	82.7	1.5	15.5	(NA)	(NA)
1963 Census....	32	15	3.3	21.8	2.3	4.8	14.0	56.2	24.3	78.0	1.8	15.7	81	90-95
1962 ASM <sup>1</sup> .....	(NA)	(NA)	3.3	20.8	2.1	4.4	12.3	50.9	20.6	71.3	0.9	14.1	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	3.4	20.2	2.2	4.5	12.2	49.2	20.7	69.5	1.3	14.0	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	3.6	19.3	2.4	4.7	12.3	46.6	20.1	66.2	0.5	12.9	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	3.7	20.1	2.4	4.8	12.6	44.2	19.4	62.3	1.0	12.8	(NA)	(NA)
1958 Census <sup>2</sup> ...	33	12	3.5	15.8	2.3	4.4	10.7	39.5	18.5	58.8	0.7	10.7	82	97

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary****Rocco C. Siciliano, Under Secretary****BUREAU OF THE CENSUS George Hay Brown, Director**

called the coverage ratio, was between 90 and 95 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1,

2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

#### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3492, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Report series:

MA-25H, Manufactures Shipments of Office Furniture. Data for fire-resistive and burglary-resistive safes and chests are shown in the above report for every year except those years in which the census of manufactures is conducted.

### TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(Geographic data for this industry will not be published separately)



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (\$1,000)	Quantity	Value (\$1,000)
3492- --	SAFES AND VAULTS, TOTAL.....		(X)	79.5	(X)	59.3
	Safes and chests:					
34920 15	Fire-resistive <sup>1</sup> .....	1,000.....	<sup>e</sup> 150.3	13.5	71.0	8.2
34920 21	Burglary-resistive <sup>1</sup> .....	...do.....	<sup>e</sup> 28.2	6.5	21.0	5.5
34920 41	Safe deposit boxes.....	...do.....	<sup>e</sup> 622.5	14.2		
34920 98	All other bank and security vaults and equipment, including bank security lockers, night depositories, security equipment for drive-in windows and similar equipment and signaling and alarm equipment when sold together with bank equipment and other interior equipment for safes and chests.....		(X)	45.1	(X)	45.6
34920 00	Safes and vaults, not specified by kind. (Represents principally establishments with 10 employees or more in 1967. See Note).....					
34920 02	Safes and vaults, not specified by kind (Represents principally establishments with fewer than 10 employees in 1967. See Note)....		(X)	0.2		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

<sup>e</sup>From 10 to 30 percent of this figure was estimated. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Safes and vaults are shown as fire-resistive or burglary resistive, depending on the primary purpose for which they are built.

## 1967 CENSUS OF MANUFACTURES

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	1967		1963	
		Quantity (1,000 short tons)	Delivered cost (million dollars)	Quantity (1,000 short tons)	Delivered cost (million dollars)
	INDUSTRY 3492.--SAFES AND VAULTS				
	Materials, containers, parts, and supplies, total.....	(X)	27.9	(X)	20.2
	Mill shapes and forms (except castings):				
	Carbon steel:				
331011	Bars and bar shapes.....	36.8	9.7	(D)	(D)
331012	Sheet and strip.....				
331017	Wire and wire products.....				
331019	All other carbon steel mill shapes and forms.....				
	Alloy steel (except stainless):				
331021	Bars and bar shapes.....	36.8	9.7	(D)	(D)
331029	All other alloy steel mill shapes and forms.....				
331031	Stainless steel mill shapes and forms.....				
970099	All other materials and components, parts, containers, and supplies consumed.....	(X)	14.9	(D)	(D)
973000	Materials, parts, containers, etc., n.s.k. <sup>1</sup> .....	(X)	3.3		

(D) Withheld to avoid disclosing figures of individual companies. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

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This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

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# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

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In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

**Textile mill products • Apparel and leather • Chemicals, rubber, and plastics • Machinery and equipment • Primary metals • Intermediate metal products • Processed foods • Lumber, furniture, and paper products • Stone, clay, and glass products.**

A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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**U. S. DEPARTMENT OF COMMERCE**  
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WASHINGTON, D.C. 20233**

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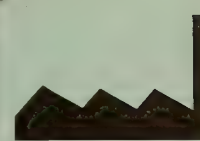
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# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

**preliminary  
report**

### Steel springs

SIC Code 3493

The Steel Springs Industry includes establishments primarily engaged in manufacturing leaf springs, hot wound springs, and coiled flat springs. Establishments primarily engaged in manufacturing wire springs are classified in industry 3481, and rolling mills manufacturing steel springs in industry 3312.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Steel Springs Industry amounted to \$216.6 million, an increase of 37 percent compared with 1963. Value added by manufacture at

\$100.1 million in 1967 was 44 percent more than value added in 1963. Average employment in the industry showed an increase of 21 percent from 1963 to a total of 7.6 thousand employees in 1967.

Of the \$216.6 million total value of shipments and other receipts of establishments classified as steel springs, \$37.1 million were products primary to other industries; and \$8.4 million were receipts for miscellaneous activities. The industry shipments of primary products represented 82 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 91 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3493.--STEEL SPRINGS														
1967 Census....	112	60	7.6	54.3	6.1	12.4	39.3	100.1	116.1	216.6	6.0	33.9	82	66
1966 ASM <sup>1</sup> .....	(NA)	(NA)	5.9	41.3	4.8	9.9	30.9	69.7	92.8	162.2	2.4	23.0	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	5.9	40.3	4.7	9.7	30.1	61.5	90.0	151.4	1.8	23.5	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	5.8	39.2	4.6	9.7	29.8	67.0	85.0	151.9	*1.6	21.6	(NA)	(NA)
1963 Census.....	96	49	6.3	41.3	5.1	10.6	31.4	69.3	89.1	157.7	2.0	21.1	91	67
1962 ASM <sup>1</sup> .....	(NA)	(NA)	7.0	45.7	5.5	11.6	33.7	77.3	88.6	165.1	3.0	24.3	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	6.4	38.6	4.9	9.9	27.7	60.5	70.9	131.1	*2.0	23.0	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	6.6	40.3	5.2	10.7	29.7	65.4	79.3	143.3	2.6	22.8	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	7.1	40.8	5.6	11.0	29.5	67.6	84.2	150.4	*2.1	26.5	(NA)	(NA)
1958 Census <sup>2</sup> ....	90	53	6.8	35.6	5.2	10.0	25.5	54.1	65.6	120.5	1.7	21.5	81	69

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued November 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**

## 1967 CENSUS OF MANUFACTURES

The total value of steel springs shipped by all producers in 1967 was \$257.8 million of which \$171.1 million, or 66 percent, were shipped by plants classified in industry 3493, Steel Springs, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 67 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
INDUSTRY 3493.--STEEL SPRINGS													
United States, total.....	112	60	7.6	54.3	6.1	12.4	39.3	100.1	116.1	216.6	6.0	6.3	69.3
East North Central....	41	29	4.2	33.2	3.3	6.9	23.8	64.4	76.9	141.2	2.0	(D)	(D)
Ohio.....	8	5	0.8	6.3	0.6	1.3	4.5	9.8	9.2	19.1	0.4	(D)	(D)
West.....	24	7	0.4	3.1	0.3	0.6	1.9	4.4	4.6	9.2	0.2	(D)	(D)
Washington.....	5	2	0.1	0.5	0.1	0.1	0.4	0.8	0.6	1.4	(D)	(D)	(D)
California.....	14	4	0.3	2.2	0.2	0.5	1.4	3.2	3.7	7.0	(D)	0.4	4.1

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3493- --	STEEL SPRINGS, TOTAL.....		(X)	257.8	(X)	205.2
	Helical springs, hot wound:					
	Automobile coil springs:					
34930 04	Shipments for domestic replacement, including shipments to U.S. motor vehicle manufacturers for resale.....	1,000 short tons.....	8.6	3.7	128.5	39.1
34930 06	Shipments to U.S. motor vehicle manufacturers or their suppliers for use in original equipment.....	...do.....	202.2	81.2		
34930 08	Shipments for export, including transfers to other divisions for export.....	...do.....	5.9	3.6		
34930 15	Locomotive and railroad car.....	...do.....	52.7	19.5	42.2	13.8
34930 19	Other helical springs, hot wound.....	...do.....	10.6	4.6	11.6	6.4
	Leaf springs:					
	Automotive (auto, truck, bus, trailer, etc.):					
34930 51	Shipments for domestic replacement, including shipments to U.S. motor vehicle manufacturers for resale.....	...do.....	78.1	31.6	298.4	109.7
34930 55	Shipments to U.S. motor vehicle manufacturers or their suppliers for use in original equipment.....	...do.....	118.7	41.7		
34930 57	Shipments for export, including transfers to other divisions for export.....	...do.....	1.8	0.8		
34930 63	Leaf springs for tractors, farm equipment, locomotive and railroad cars, and other heavy equipment.....	...do.....	7.8	2.9	6.7	2.1
34930 71	Flat springs made of sheet and strip.....	...do.....	20.2	45.5	(NA)	19.8
34930 98	Other steel springs (including torsion bar springs), except wire springs.....	...do.....	14.6	7.5	(NA)	7.0
34930 00	Steel springs, n.s.k. (For establishments with 10 or more employees in 1967. See Note.).....		(X)	13.7	(X)	7.3
34930 02	Steel springs, n.s.k. (For establishments with less than 10 employees in 1967. See Note.).....		(X)	1.5		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3493.--STEEL SPRINGS					
	Materials, containers, parts, and supplies, total.....		(X)	103.6	(X)	82.3
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	111.4	18.6	65.5	11.0
331012	Sheet and strip.....	..do.....	23.4	6.3	49.6	8.9
331017	Wire and wire products.....	..do.....	21.8	10.6	11.7	5.4
331019	All other carbon steel mill shapes and forms.....	..do.....	1.6	0.2	2.3	0.6
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	..do.....	155.8	28.0	206.5	35.4
331029	All other alloy steel mill shapes and forms.....	..do.....	8.6	2.0		
331031	Stainless steel mill shapes and forms.....	..do.....	0.2	0.7	0.2	0.5
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	24.4	(X)	18.0
973000	Materials, parts, containers, etc., n.s.k. <sup>1</sup> .....		(X)	12.8	(X)	2.6

n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3493, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

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**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-34E-5

MC67(P)-34E-9

INDUSTRY SERIES

**preliminary  
report**

## Valves and pipe fittings

SIC Code 3494

The Valves and Pipe Fittings, Except Plumbers' Brass Goods, Industry includes establishments primarily engaged in manufacturing valves for controlling the flow of liquids or gases in pipes and mains, and for machinery. Establishments primarily engaged in manufacturing faucets, spigots, and similar plumbers' brass goods and fittings are classified in industry 3432.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Valves and Pipe Fittings Industry amounted to \$2,248.1 million, an increase of

42 percent compared with 1963. Value added by manufacture at \$1,354.4 million in 1967 was 44 percent more than value added in 1963. Average employment in the industry showed an increase of 12 percent from 1963 to a total of 94.2 thousand employees in 1967.

Of the \$2,248.1 million total value of shipments and other receipts of establishments classified as valves and pipe fittings, \$296.9 million were products primary to other industries; and \$120.7 million were receipts for miscellaneous activities. The industry shipments of primary products represented 86 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was also 86 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3494.--VALVES AND PIPE FITTINGS														
1967 Census....	663	409	94.2	676.5	67.1	137.5	425.8	1,354.4	926.6	2,248.1	97.2	584.0	86	88
1966 ASM <sup>1</sup> .....	(NA)	(NA)	92.2	642.4	66.1	138.7	410.6	1,321.6	932.6	2,209.0	67.9	540.0	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	87.9	580.4	63.1	129.6	368.8	1,165.7	817.5	1,933.9	44.4	477.2	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	81.9	533.5	59.1	123.3	344.7	1,003.9	711.8	1,691.5	*45.5	407.8	(NA)	(NA)
1963 Census....	646	374	80.4	500.0	58.1	116.9	321.2	942.7	652.0	1,588.5	39.0	385.4	86	85
1962 ASM <sup>1</sup> .....	(NA)	(NA)	81.3	491.4	57.9	116.4	311.7	933.0	655.2	1,570.5	38.4	389.1	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	76.4	446.4	54.2	107.4	277.7	820.9	616.4	1,418.5	29.9	357.6	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	75.0	424.6	54.2	105.7	273.0	769.0	577.5	1,343.3	32.0	335.3	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	76.0	424.4	56.1	110.7	280.4	820.9	573.4	1,357.1	35.1	327.8	(NA)	(NA)
1958 Census <sup>2</sup> ....	590	347	76.8	410.2	55.9	110.6	269.6	732.6	512.9	1,264.0	34.1	284.5	89	88

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued December 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

Harold C. Passer, Assistant Secretary for Economic Affairs

BUREAU OF THE CENSUS George Hay Brown, Director



The total value of valves and pipe fittings shipped by all producers in 1967 was \$2,073.8 million of which \$1,830.5 million, or 88 percent, were shipped by plants classified in industry 3494, Valves and Pipe Fittings, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 85 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3494, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-38B, Selected Instruments and Related Products.

This report collects data on automatic regulating valves.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3494.--VALVES AND PIPE FITTINGS													
United States, total.....	663	409	94.2	676.5	67.1	137.5	425.8	1,354.4	926.6	2,248.1	97.2	80.4	942.7
New England.....	73	37	8.7	60.5	6.1	12.3	37.3	128.6	88.4	212.0	8.9	8.7	88.6
Massachusetts.....	45	21	5.3	37.5	3.7	7.6	22.0	76.9	53.2	126.5	4.9	5.1	49.8
Connecticut.....	14	8	1.9	11.7	1.3	2.4	7.6	26.9	18.0	43.5	2.0	2.2	22.7
Middle Atlantic.....	156	95	20.0	145.7	14.0	28.9	90.9	294.4	171.7	455.8	18.8	18.8	215.5
New York.....	45	22	4.4	33.3	3.2	6.8	21.3	58.7	34.2	91.3	4.1	4.2	41.3
New Jersey.....	47	31	4.8	38.4	3.0	6.2	20.3	80.1	44.4	123.0	3.9	4.0	49.9
Pennsylvania.....	64	42	10.7	74.0	7.8	15.9	49.3	155.7	93.1	241.4	10.9	10.7	124.3
East North Central....	177	121	31.8	240.7	22.8	45.9	149.7	441.1	331.9	767.3	37.5	29.6	340.9
Ohio.....	60	43	10.8	78.5	8.1	16.5	52.4	136.1	103.7	241.1	25.0	9.5	106.1
Indiana.....	21	16	3.3	22.8	2.5	4.7	14.1	41.7	40.2	81.8	2.2	3.8	45.8
Illinois.....	51	33	11.7	92.2	7.8	15.2	52.2	156.2	121.8	277.0	4.5	10.5	125.1
Michigan.....	35	24	4.3	32.0	3.4	7.0	22.2	83.4	46.3	122.7	4.2	4.4	50.7
Wisconsin.....	10	5	1.9	15.3	1.2	2.5	8.8	23.6	19.9	44.7	1.6	1.4	13.3
West North Central....	29	19	7.4	50.0	5.1	10.8	31.6	117.5	66.3	181.8	10.2	4.7	73.9
Missouri.....	9	6	2.9	19.5	2.2	4.3	13.3	49.8	26.5	77.4	2.4	1.5	26.1
South Atlantic.....	26	17	2.2	12.6	1.7	3.3	8.6	32.0	17.2	48.4	1.8	1.5	12.9
East South Central....	20	16	8.1	50.9	6.5	13.1	38.6	109.6	75.9	180.5	7.9	6.1	67.4
Kentucky.....	6	6	2.9	18.9	2.2	4.5	13.2	39.3	34.4	72.0	4.9	(D)	(D)
Alabama.....	5	4	3.5	21.3	2.9	5.7	16.8	45.8	24.9	68.8	1.7	2.8	29.3
West South Central....	71	47	7.9	51.2	5.7	12.0	32.6	107.2	90.6	196.1	8.1	4.6	58.0
Oklahoma.....	15	10	1.2	7.8	0.8	1.7	4.6	16.0	8.3	23.9	1.1	0.6	7.7
Texas.....	46	30	5.2	34.7	3.7	7.9	22.4	70.3	69.7	137.8	5.3	3.2	42.4
Mountain.....	10	4	0.9	6.9	0.5	1.2	3.5	11.5	10.1	22.0	0.3	0.6	9.5
Pacific.....	101	53	7.3	58.0	4.8	10.1	33.0	112.4	74.6	184.2	3.7	5.8	76.0
California.....	94	50	7.1	56.4	5.7	9.8	31.9	108.2	72.7	178.0	3.3	5.6	74.3

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers	
			Quantity	Value (million dollars)
1967				
3494- --	VALVES AND PIPE FITTINGS, TOTAL.....		(X)	2,073.8
34941 --	Automatic regulating and control valves, total <sup>1</sup> .....		(X)	309.6
34941 21	Control valves, all metals, pressures and types (power actuated, responding to a signal transmitted from a control instrument regulating an industrial process) or power actuated by signals from instrumentation in a control loop.....	Million units	(NA)	111.4
34941 50	Automatic regulating valves (self-actuated):			
	Reported in the census of manufactures.....		(X)	192.8
	Reported on annual Form MA-38B.....		(X)	203.4
34941 51	Diaphragm-actuated.....		(X)	102.6
34941 53	Float-actuated (including float cages).....	1,000 units..	95.3	5.7
34941 54	Solenoid-actuated.....	Million units	11.4	59.2
34941 55	Other automatic regulating devices.....		(X)	35.9
34941 00	Automatic regulating and control valves, n.s.k.....		(X)	5.4
34942 --	Valves for power transfer (pneumatic and hydraulic), total <sup>1</sup> .....	1,000 units..	(X)	220.4
	Hydraulic valves, all pressures (excluding aircraft):			
34942 31	Directional control.....	..do.....	<sup>e</sup> 4,122.6	105.5
34942 33	Pressure control.....	..do.....	684.2	19.5
34942 35	Volume flow control.....	..do.....	463.7	8.7
34942 37	Servovalves.....	..do.....	73.9	11.9
34942 41	Combination.....	..do.....	<sup>e</sup> 166.4	6.4
34942 43	Fluidic (including amplifiers, interface devices and transducers).....	..do.....		
	Pneumatic valves, all pressures (excluding aircraft):			
34942 61	Directional control.....	..do.....	1,154.5	31.4
34942 63	Pressure control (including filter-lubricator-regulator).....	..do.....	(NA)	7.5
34942 65	Volume control (flow).....	..do.....	942.6	3.5
34942 67	Combination.....	..do.....	43.0	0.9
34942 71	Fluidic (including amplifiers, interface devices and transducers).....	..do.....		
34942 98	All other power transfer valves (excluding aircraft).....	..do.....	(NA)	9.3
34942 00	Valves for power transfer, n.s.k.....	..do.....	(X)	15.8
34943 --	Other metal valves for piping systems and equipment (except plumbing and heating valves), total <sup>1</sup> .....		(X)	819.0
	Gates, globes angles, straightway (Y type) checks, stop and check, cross, 3- and 4-way, etc. (including remote control operators, but excluding automatic regulating and control valves):			
	Iron (including ductile or nodular), all pressures:			
34943 13	Municipal type (water and sewerage).....	1,000 short tons.....	(NA)	100.8
34943 15	Fire hydrants.....	..do.....	<sup>e</sup> 25.1	20.0
34943 17	All other iron valves.....	..do.....	<sup>e</sup> 63.5	<sup>e</sup> 66.9
	Steel, all pressures:			
34943 21	Cast and forged carbon steel.....	..do.....	43.5	110.0
34943 23	Cast and forged alloy steel (all types, including stainless).....	..do.....	31.7	77.4
34943 25	Brass and bronze (125 lb. w.s.p. and over).....	..do.....	29.6	110.2
34943 31	Ball valves (including operators), all metals, pressures and types.....	..do.....	(NA)	61.6
34943 33	Butterfly valves (including operators), all metals, pressures and types.....	..do.....	16.7	41.4
34943 35	Plug valves (including operators) all metals, pressures and types (such as lubricated, nonlubricated, cylindrical, eccentric, sleeve lined).....	..do.....	24.3	59.2
34943 37	Cocks and stops, all metals, pressures and types.....	..do.....	4.8	13.1
34943 39	Diaphragm and pinch valves (including operators), all metals, pressures and types.....	..do.....	(NA)	10.6
34943 41	All other engineered specification valves, 125 lb. w.s.p. and over (including operators), n.e.c.....	..do.....	(NA)	6.1
34943 43	All other general purpose valves (including operators), except plumbing and heating valves, n.e.c.....	..do.....	7.5	34.4
	Pop safety valves and relief valves (over 15 lb. w.s.p.):			
34943 51	Iron.....	..do.....	0.6	2.9
34943 53	Steel (carbon and alloy).....	..do.....	<sup>e</sup> 4.4	28.3
34943 55	Brass and bronze.....	..do.....	3.7	14.5
34943 57	Compressed gas cylinder valves.....	1,000 units..	(NA)	8.7
34943 61	Steam traps (over 15 lb. w.s.p.).....	Million units	1.1	12.2
34943 98	Other metal valves and specialties.....	1,000 s. tons	(X)	49.0
34943 00	Other metal valves for piping systems and equipment, n.s.k.....		(X)	11.5

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers	
			Quantity	Value (million dollars)
			1967	
3494- --	VALVES AND PIPE FITTINGS,--Continued			
34944 --	Plumbing and heating valves and specialties (except plumbers' brass goods), total <sup>1</sup> .....		(X)	94.3
34944 11	Gates, globes, angles, straightway (Y type) checks, stop and check, cross, 3 and 4 way, drain, etc., brass and bronze (under 125 lb. w.s.p.).....	1,000 short tons.....	e 21.6	43.0
34944 13	Steam traps (15 lb. w.s.p. and under).....	..do.....	0.5	2.4
34944 15	Pop safety valves and relief valves (15 lb. w.s.p. and under).....	..do.....	0.4	1.5
34944 19	Other metal plumbing and heating valves and specialties (15 lb. w.s.p. and under).....	..do.....	(NA)	40.4
34944 00	Plumbing and heating valves and specialties, n.s.k.....	..do.....	(X)	7.0
34945 --	Metal fittings, flanges, and unions for piping systems, total <sup>1</sup> .....		(X)	493.1
34945 11	Gray iron fittings, flanges, and unions (not for cast iron pipe).....	1,000 units..	86.0	39.9
	Malleable iron:			
34945 13	Fittings and flanges.....	..do.....	92.2	70.0
34945 15	Unions and union fittings.....	..do.....	15.4	17.2
	Copper, brass or bronze (used for IPS, DMV and K,L,M copper tubing sizes):			
34945 18	Cast bronze or bronze fittings, flanges, and unions.....	Million lbs..	77.8	87.1
34945 19	Wrought copper and wrought copper alloy fittings, flanges, and unions.....	..do.....		
34945 21	Cast carbon and alloy steel fittings, flanges, and unions.....	1,000 short tons.....	2.7	11.4
	Forged carbon and alloy steel:			
34945 23	Fittings and unions.....	..do.....	60.4	86.2
34945 25	Flanges (all types).....	..do.....	64.9	51.4
34945 27	Fittings, butt-welding type.....	..do.....	38.1	39.3
	Pipe hangers and supports:			
34945 31	Pipe hangers and supports (not including metal framing).....		(X)	30.0
34945 33	Metal framing and fittings for mechanical and electrical supports.....			
34945 98	All other metal fittings and unions for piping systems.....	..do.....	(NA)	48.5
34945 00	Metal fittings, flanges and unions for piping systems, n.s.k.....		(X)	12.1
34946 --	Fittings and assemblies for tubing and hose (except plumbers' brass goods), total <sup>1 2</sup> .....		(X)	55.1
	Fittings and assemblies for tubing used in fluid and power transfer systems:			
	Flared type:			
34946 11	Brass and bronze (SAE 45° and 37°).....	Million lbs..	6.4	8.0
34946 13	Carbon steel (JIC 37°).....	..do.....	4.2	9.4
34946 15	Other (including alloy steel).....	..do.....		
	Flareless type:			
34946 21	Brass and bronze.....	..do.....	7.0	20.1
34946 23	Carbon steel.....	..do.....		
34946 25	Other (including alloy steel).....	..do.....		
34946 31	Permanent joint (all metals).....	..do.....		
	Hose end fittings and hose assemblies for hydraulic, pneumatic, and fluid transfer systems (except aircraft, household and garden hose fittings and assemblies):			
34946 41	Low pressure hose end fittings and hose assemblies (all metals, fabric reinforced, such as SAE 100R3, 40R2, 30R2) all types.....	Million units	13.3	6.9
	Medium pressure hose end fittings and hose assemblies (all metals, usually single wire reinforced, such as SAE 100R1, 100R5):			
34946 51	Reusable end fittings.....	..do.....		
34946 53	Permanent end fittings.....	..do.....		
34946 55	Assemblies with reusable end fittings.....	..do.....		
34946 57	Assemblies with permanent end fittings.....	..do.....	-	-
	High pressure hose end fittings and hose assemblies (all metals, usually two wire reinforced, such as SAE 100R2A, 100R2B):			
34946 61	Reusable end fittings.....	..do.....	142.6	8.1
34946 63	Assemblies with reusable end fittings.....	..do.....		
34946 65	Permanent end fittings and assemblies with permanent end fittings.....	..do.....		
34946 71	Very high pressure hose end fittings and hose assemblies (usually spiral wire reinforced having higher pressure ratings than high pressure assemblies of equivalent inside diameter), all types.....	..do.....	142.6	8.1
34946 79	All other hose end fittings and hose assemblies (including suction type, reinforced elastomeric plastics, etc.).....	..do.....		
34946 00	Fittings and assemblies for tubing and hose, n.s.k.....		(X)	2.6
34940 00	Valves and fittings, n.s.k. (For establishments with 10 or more employees. See Note.).....		(X)	76.6
34940 02	Valves and fittings, n.s.k. (For establishments with fewer than 10 employees. See Note.)....		(X)	5.7

See footnotes at end of table.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers	
			Quantity	Value (million dollars)
			1963	
3494- --	VALVES AND PIPE FITTINGS, (EXCEPT PLUMBERS' BRASS GOODS AND FITTINGS), TOTAL.....		(X)	1,525.4
34941 --	Metal valves for piping systems (except plumbing and heating valves), total.....		(X)	686.1
	Gates, globes, angles, checks, butterflies, lubricated plugs, codes, stop and checks, cross, etc. (except automatic regulating valves):			
34941 11	Iron (all pressures) (includes fire hydrants).....	Short tons...	146.2	160.2
34941 13	Steel (carbon and alloy) (all pressures).....	..do.....	65.8	182.4
34941 15	Brass and bronze (125 lb. w.s.p. and over).....	..do.....	33.3	99.1
34941 17	Aluminum.....	..do.....	0.6	3.7
	Pop safety valves and relief valves (over 15 lb. w.s.p.):			
34941 31	Iron.....	..do.....	2.9	6.9
34941 33	Steel (carbon and alloy).....	..do.....	6.1	24.7
34941 35	Brass and bronze.....	..do.....	3.2	12.7
	Automatic regulating valves:			
34941 51	Diaphragm-actuated.....		(NA)	55.9
34941 53	Float-actuated (include float cages).....		(NA)	5.2
34941 54	Solenoid-actuated.....	1,000 units..	1.5	25.7
34941 55	Other automatic regulating valves.....		(NA)	83.3
34941 57	Compressed gas cylinder valves.....		(NA)	13.1
34941 00	Metal valves for piping systems, n.s.k.....		(X)	13.3
34942 --	Metal fittings and unions for piping systems:			
	Fittings, flanges, and unions.....		(X)	421.7
34942 11	Gray iron.....	Short tons...	77.2	34.9
	Malleable iron:			
34942 13	Fittings and flanges.....	..do.....	85.4	56.9
34942 15	Unions and union fittings.....	..do.....	20.4	24.2
34942 21	Cast carbon and alloy steel.....	..do.....	7.1	10.5
	Forged carbon and alloy steel:			
34942 23	Fittings and unions.....	..do.....	45.0	62.7
34942 25	Flanges.....	..do.....	40.0	33.4
34942 27	Fittings, welding type.....	..do.....	42.8	34.2
34942 18	Cast and wrought copper and copper-brass alloy.....	..do.....	50.3	88.2
34942 19	Aluminum.....	..do.....	0.5	1.3
	Steam traps (over 15 lb. w.s.p.):			
34942 51	Thermostatic; and combination float and thermostatic.....	1,000 units..	(NA)	7.5
34942 55	Mechanical.....	..do.....	0.4	5.0
34942 98	Other metal piping specialties for piping systems (except plumbing and heating valves)....		(X)	57.0
34942 00	Metal fittings and unions for piping systems, n.s.k.....		(X)	6.0
34943 --	Plumbing and heating valves and specialties (except plumbers' brass goods), total.....		(X)	87.9
34943 11	Gates, globes, angles, checks, butterflies, lubricated plugs, cocks, stop and checks, cross, etc.; brass and bronze valves (under 125 w.s.p.).....	Short tons...	11.4	24.3
34943 51	Steam traps (15 lb. w.s.p. and under).....		(X)	3.6
34943 98	Other metal plumbing and heating valves and specialties, including pop safety valves and relief valves - 15 lb. w.s.p. and under.....		(X)	55.4
34943 00	Plumbing and heating valves and specialties, except plumbers' brass goods and fittings, n.s.k.		(X)	4.6
34944 --	Other metal valves and fittings, except plumbers' brass goods and fittings, total.....		(X)	303.3
34944 71	Pipe hangers and pipe supports.....		(X)	27.6
34944 81	Valves for power transfer (pneumatic or hydraulic) such as for directional control, pressure control, and flow or volume control.....		(X)	183.2
34944 98	Other metal valves and fittings, except plumbers' brass goods and fittings.....		(X)	87.0
34944 00	Other metal valves and fittings, except plumbers' brass goods and fittings, n.s.k.....		(X)	5.5
34940 00	Valves and fittings, except plumbers' brass goods and fittings, n.s.k.....		(X)	26.5

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

- Represents zero.      <sup>2</sup>From 10 to 30 percent of this figure was estimated.      (NA) Not available.      n.e.c. Not elsewhere classified.

n.s.k. Not specified by kind.      (X) Not applicable.

<sup>1</sup>The definitions of the product classes in this industry were changed significantly in 1967 from those used in 1966 and earlier years and, therefore, comparable data are not available.

<sup>2</sup>Includes only the value of fittings and assemblies for tubing and hose reported as such. Furthermore, it represents principally fittings and assemblies reported by establishments classified in the Valves and Pipe Fittings Industry. An indeterminate amount of these products have been classified by respondents as rubber hose and tubing (SIC 3069), flexible metal hose and tubing (SIC 3599), hardware hose fittings and couplings (SIC 3429), screw machine products (SIC 3451), and refrigeration machinery (SIC 3585).

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3494.--VALVES AND PIPE FITTINGS					
	Materials, parts, containers, and supplies, total.....		(X)	850.5	(X)	569.8
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	106.8	23.5	61.8	11.7
331012	Sheet and strip.....	..do.....	17.3	3.6	39.6	6.6
331013	Plates.....	..do.....	31.6	7.0	26.8	4.5
331019	All other carbon steel mill shapes and forms.....	..do.....	57.8	14.1	54.6	13.1
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	..do.....	26.6	9.7	15.1	4.3
331029	All other alloy steel mill shapes and forms.....	..do.....	11.3	4.7	9.0	3.6
331031	Stainless steel mill shapes and forms.....	..do.....	16.9	22.8	12.4	16.5
	Copper and copper base alloy:					
335790	Insulated wire and cable.....	Million lbs. copper content..	1.7	2.4	0.8	0.8
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	96.4	44.5	109.4	37.8
335123	Plate, sheet, and strip, including military cups and discs..	..do.....	(NA)	1.6	4.0	2.0
335127	Pipe and tube.....	..do.....	20.0	13.1	33.0	16.5
	Aluminum and aluminum-base alloy:					
335205	Extruded shapes (rod, bar, pipe, etc.).....	..do.....	7.9	4.1	2.0	1.4
335209	All other aluminum mill shapes and forms (wire, rod, etc.)..	..do.....	3.4	1.7	11.0	5.6
	Primary metals:					
331051	Pig iron.....	1,000 short tons.	70.1	4.1	91.4	5.5
333401	Aluminum and aluminum-base alloy refinery shapes, (ingot, slugs, etc.).....	..do.....	1.6	0.8	1.6	0.9
333122	Copper and copper-base alloy refinery shapes.....	..do.....	40.1	36.0	63.6	38.9
	Scrap (exclude home scrap):					
999811	Iron and steel.....	..do.....	232.9	8.8	222.0	8.2
999808	Aluminum and aluminum-base alloy.....	..do.....	( <sup>1</sup> )	( <sup>1</sup> )	6.3	3.6
999812	Copper and copper-base alloy.....	..do.....	19.0	12.3	9.5	4.8
	Castings (rough and semifinished): <sup>2</sup>					
332011	Iron (gray and malleable).....	..do.....	165.0	60.4	113.6	39.5
332300	Steel.....	..do.....	55.5	58.7	40.2	37.9
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	7.2	7.8	6.1	5.2
336200	Copper and copper-base alloy.....	..do.....	37.2	34.6	47.9	30.8
339100	Iron and steel forgings <sup>3</sup> .....	1,000 short tons.	55.2	38.2	26.1	14.7
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	381.7	(X)	215.7
976000	Materials, parts, containers, etc., n.s.k. <sup>4</sup> .....		(X)	54.3	(X)	39.6

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Included with material code 970099 "All other materials and components, etc." This item totaled less than \$2.5 million.<sup>2</sup>The figures for castings produced and consumed in the same establishment are: iron castings, 229.7 thousand short tons in 1967 and 258.4 thousand short tons in 1963; steel castings, 9.9 thousand short tons in 1967 and 6.0 thousand short tons in 1963; copper and copper-base alloy castings, 119.6 million pounds in 1967, and 122.9 million pounds in 1963. Data for aluminum and aluminum-base alloy castings are not available.<sup>3</sup>In 1967, the figure for iron and steel forgings produced and consumed by the same establishment was 20.5 thousand short tons. No comparable date for 1963 are available.<sup>4</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3494, these small establishments accounted for approximately 0.2 percent of payrolls and 0.2 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





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OFFICIAL BUSINESS

# 1967 CENSUS OF MANUFACTURES

INDUSTRY SERIES

## Collapsible tubes

SIC Code 3496

preliminary  
report

The Collapsible Tubes Industry includes establishments primarily engaged in manufacturing collapsible tubes defined as cylindrical containers for viscous products, made of thin flexible metal, usually of tin, tin-lined lead, lead, lead-tin alloy or aluminum, with integral shoulder and neck, provided with an appropriate size opening in the throat, and usually with a screw cap made of plastic material for closure over the neck.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Collapsible Tubes Industry amounted to \$65.0 million, an increase of 24 percent compared with 1963. Value added by manufacture at \$38.5 million in 1967 was 26 percent more than value added in 1963. Average employment in the industry showed an increase of 8 percent from 1963 to a total of 4.3 thousand employees in 1967.

Of the \$65.0 million total value of shipments and other receipts of establishments classified as collapsible tubes, \$12.6 million were products primary to other industries; and \$1.4 million

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3496.-COLLAPSIBLE TUBES														
1967 Census....	19	18	4.3	23.6	3.9	7.6	18.7	38.5	26.8	65.0	4.1	6.2	80	100
1966 ASM <sup>1</sup> .....	(NA)	(NA)	4.5	23.3	4.1	8.0	18.7	38.8	26.3	65.0	3.2	6.6	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	4.3	20.4	3.9	7.7	16.1	36.6	24.6	60.9	1.4	6.3	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	4.1	19.7	3.7	7.2	15.6	33.8	21.9	55.1	1.9	6.2	(NA)	(NA)
1963 Census....	24	19	4.0	18.8	3.5	6.9	14.8	30.6	20.4	51.0	1.9	5.0	88	100
1962 ASM <sup>1</sup> .....	(NA)	(NA)	4.1	18.4	3.6	7.2	16.3	28.9	19.2	47.6	2.1	5.0	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	4.2	18.1	3.4	7.3	16.2	27.4	20.5	48.0	0.8	5.1	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	4.0	17.5	3.5	7.1	15.6	28.9	19.9	48.6	1.2	4.6	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	4.0	17.3	3.6	7.2	15.4	28.4	20.8	48.7	2.1	4.9	(NA)	(NA)
1958 Census <sup>2</sup> ....	22	20	3.8	16.1	3.4	6.9	12.5	25.3	19.2	44.7	1.6	3.9	91	100

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 3, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents



U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary  
Rocco C. Siciliano, Under Secretary  
William H. Chartener, Assistant Secretary for Economic Affairs  
BUREAU OF THE CENSUS A. Ross Eckler, Director



were receipts for miscellaneous activities. The industry shipments of primary products represented 80 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 88 percent in 1963.

The total value of collapsible tubes shipped by all producers in 1967 was \$51.0 million of which \$51.0 million, or 100 percent, were shipped by plants classified in industry 3496, Collapsible

Tubes. This percent, called the coverage ratio, was also 100 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

1967 CENSUS OF MANUFACTURES

3

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture  (million dollars)	Cost of materials  (million dollars)	Value of shipments  (million dollars)	Capital expenditures, new  (million dollars)	All employees  (1,000)	Value added by manufacture  (million dollars)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
	INDUSTRY 3496.—COLLAPSIBLE TUBES												
United States, total.....	19	18	4.3	23.6	3.9	7.6	18.7	38.5	26.8	65.0	4.1	4.0	30.6
North Central.....	4	3	0.4	1.8	0.3	0.6	1.4	3.2	2.8	6.0	0.2	0.4	2.9

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3496	COLLAPSIBLE TUBES, TOTAL.....		(X)	51.0	(X)	44.2
34960 11	Aluminum.....	Million gross..	6.6	31.8	4.6	22.6
34960 12	Lead.....	..do.....	2.1	11.8	3.0	14.5
34960 13	Tin.....	..do.....	0.8	6.4	0.8	5.9
34960 29	Other, including tin-coated and tin-lead alloy.....		(X)	0.4	(X)	0.7
34960 00	Collapsible tubes, n.s.k.(Represents principally establishments with 10 employees or more in 1967. See Note.).....		(X)	0.3	(X)	0.7
34960 02	Collapsible tubes, n.s.k.(Represents principally establishments with fewer than 10 employees in 1967. See Note.).....		(X)	0.3	(X)	

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(X) Not applicable.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3496.—COLLAPSIBLE TUBES					
	Materials, parts, and supplies, total.....		(X)	24.7	(X)	19.3
333401	Aluminum and aluminum-base alloy refinery shapes (ingots, slugs, etc.).....	1,000 Short tons.	10.5	7.4	7.5	5.0
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	14.3	(X)	13.3
973000	Materials, parts, containers, etc., n.s.k. <sup>1</sup> .....		(X)	3.0	(X)	1.0

(X) Not applicable.

<sup>1</sup>Represents (a) for 1967 total cost of materials for establishments of small companies (generally those with less than 10 employees) for which an estimated cost of materials was developed: for 1963 total cost of materials for small establishments reporting on "short forms" where separate figures for individual materials consumed were not requested and (b) for both 1967 and 1963 total cost of materials reported for those establishments which failed to report costs of individual materials on "standard forms."

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3496, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

**Textile mill products • Apparel and leather • Chemicals, rubber, and plastics • Machinery and equipment • Primary metals • Intermediate metal products • Processed foods • Lumber, furniture, and paper products • Stone, clay, and glass products.**

A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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**U. S. DEPARTMENT OF COMMERCE**  
**Bureau of the Census**



**U.S. DEPARTMENT OF COMMERCE  
BUREAU OF THE CENSUS  
WASHINGTON, D.C. 20233**

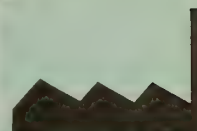
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**OFFICIAL BUSINESS**



# 1967 CENSUS OF MANUFACTURES



MC67(P)-34E-7

MC67(P)-34E-9

## INDUSTRY SERIES

### Metal foil and leaf

SIC Code 3497

**preliminary  
report**

The Metal Foil and Leaf Industry includes establishments primarily engaged in manufacturing aluminum, gold, silver, tin, and other metal foil (including converted metal foil) and leaf. Establishments primarily engaged in manufacturing plain aluminum foil are classified in industry 3352.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Metal Foil and Leaf Industry amounted to \$266.5 million, an increase of 76 percent compared with 1963. Value added by manufacture

at \$105.9 million in 1967 was 105 percent more than value added in 1963. Average employment in the industry showed an increase of 61 percent from 1963 to a total of 6.6 thousand employees in 1967.

Of the \$266.5 million total value of shipments and other receipts of establishments classified as metal foil and leaf, \$39.5 million were products primary to other industries; and \$12.5 million were receipts for miscellaneous activities. The industry shipments of primary products represented 81 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 86 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (per-cent)	Coverage ratio (per-cent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3497.--METAL FOIL AND LEAF														
1967 Census . . . .	72	46	6.6	48.7	4.8	10.3	31.1	105.9	160.0	266.5	10.5	37.4	81	58
1966 ASM <sup>1</sup> . . . . .	(NA)	(NA)	4.7	34.3	3.4	7.4	22.1	64.5	103.4	165.9	6.6	27.3	(NA)	(NA)
1965 ASM <sup>1</sup> . . . . .	(NA)	(NA)	4.3	30.9	2.8	6.7	18.4	51.7	114.0	164.0	5.5	25.6	(NA)	(NA)
1964 ASM <sup>1</sup> . . . . .	(NA)	(NA)	4.1	28.3	3.0	6.1	18.0	49.3	105.7	156.8	*5.6	23.2	(NA)	(NA)
1963 Census <sup>2</sup> . . . .	65	38	4.1	27.1	3.0	6.3	17.7	51.6	99.0	151.6	5.7	24.3	86	41
1962 ASM <sup>1</sup> . . . . .	(NA)	(NA)	3.5	23.7	2.4	5.5	15.2	48.9	74.5	120.6	*4.9	20.8	(NA)	(NA)
1961 ASM <sup>1</sup> . . . . .	(NA)	(NA)	3.1	20.8	2.2	5.0	13.5	40.2	63.1	102.2	*4.0	17.3	(NA)	(NA)
1960 ASM <sup>1</sup> . . . . .	(NA)	(NA)	3.3	20.9	2.4	5.5	13.5	43.1	66.7	109.5	(S)	17.2	(NA)	(NA)
1959 ASM <sup>1</sup> . . . . .	(NA)	(NA)	3.4	20.8	2.4	5.5	14.2	41.6	70.3	110.1	(S)	18.2	(NA)	(NA)
1958 Census <sup>2</sup> . . . .	66	31	3.5	18.7	2.5	5.1	12.1	38.1	59.2	96.4	3.3	12.5	83	52

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available. Revised.

(S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 2 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

**BUREAU OF THE CENSUS** George Hay Brown, Director

The total value of metal foil and leaf shipped by all producers in 1967 was \$370.3 million of which \$214.5 million, or 58 percent, were shipped by plants classified in industry 3497, Metal Foil and Leaf, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 41 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3497, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-34P, Aluminum Foil Converted.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967										1963		
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3497.--METAL FOIL AND LEAF												
United States, total.....	72	46	6.6	48.7	4.8	10.3	31.1	105.9	160.0	266.5	10.5	4.1	51.6
New England.....	9	7	0.5	3.1	0.3	0.7	1.9	8.1	8.0	15.9	0.2	(D)	(D)
Middle Atlantic.....	28	16	1.6	12.0	1.1	2.3	6.8	22.4	37.7	60.7	2.8	0.7	8.3
New York.....	11	5	0.6	4.0	0.4	0.8	2.4	9.3	15.4	24.8	(D)	(D)	(D)
New Jersey.....	14	8	0.8	6.1	0.5	1.2	3.5	10.4	16.9	28.0	(D)	0.4	5.7
Pennsylvania.....	3	3	0.3	2.0	0.2	0.4	0.9	2.7	5.4	8.0	(D)	(D)	(D)
North Central.....	16	11	3.2	24.7	2.3	4.9	15.8	50.5	65.4	116.6	4.5	(D)	(D)
South.....	12	8	0.9	5.9	0.8	1.6	4.7	16.5	41.7	58.0	1.5	1.0	14.0
West.....	7	4	0.4	2.9	0.3	0.8	2.0	8.4	7.1	15.3	1.6	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (\$1,000)	Quantity	Value (\$1,000)
3497- --	METAL FOIL AND LEAF, TOTAL.....		(X)	370.3	(X)	308.7
	Metal foil and leaf (except plain aluminum foil):					
34970 20	Laminated or coated foil in rolls and sheet, plain or printed: Foil laminated and/or coated with polyethylene <sup>1</sup> .....	Million lbs. (metal content).....	37.1	41.4	8.9	11.0
34970 30	Foil laminated and/or coated with materials other than polyethylene <sup>1</sup> .....	...do.....	71.6	90.6	51.4	67.2
34970 36	Converted aluminum foil products made of foil laminated to paper, polyethylene, etc., except bags and liners: <sup>2</sup> Gift wrap.....	...do.....	11.9	14.5	<sup>3</sup> 12.1	<sup>3</sup> 12.0
	Wrappers and wraps:					
34970 28	Food.....	...do.....	5.7	4.8	r10.9	r20.9
34970 29	Nonfood.....	...do.....	0.6	1.0		
34970 38	Other, excluding bags and liners.....	...do.....	15.5	11.7	30.4	32.0
	Converted aluminum foil products (foil only) except bags and liners: <sup>2</sup>					
34970 32	Household, institutional, and freezer foil.....	...do.....	127.2	104.6	99.3	83.1
34970 33	Semirigid containers.....	...do.....	39.8	28.0	52.5	37.1
34970 34	Gift wrap.....	...do.....	1.4	1.9	( <sup>3</sup> )	( <sup>3</sup> )
34970 35	Other foil products, excluding bags and liners.....	...do.....	22.3	27.9	(NA)	16.2
34970 47	Other foil, including composition (combination of two or more metals).....	...do.....	(X)	20.2	(X)	10.0
	Leaf:					
34970 51	Gold leaf.....	.....	(X)	1.0	(X)	5.4
34970 57	Other leaf.....	.....	(X)	13.4	(X)	11.0
34970 00	Metal foil and leaf, n.s.k. (For establishments with 10 or more employees. See Note.).....	.....	(X)	7.3	(X)	3.0
34970 02	Metal foil and leaf, n.s.k. (For establishments with less than 10 employees. See Note.).....	.....	(X)	2.0		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. r Revised. (X) Not applicable.

<sup>1</sup>More detailed data are available in Current Industrial Reports Series M26F, "Converted Flexible Packaging Products." There are inconsistencies in classification in these two surveys.

<sup>2</sup>More detailed data on converted aluminum foil are available in Current Industrial Reports Series MA-34P, "Aluminum Foil Converted." That report contains data on poundages of aluminum foil converted by end use. However, it is not possible to precisely compare the data in this industry with data in the annual Current Industrial Report. Some of the products for which aluminum foil consumption is reported in the annual survey are produced for use by the same company to package a commodity. In such cases, the converted aluminum foil product is not included in this industry but is included as a portion of the value of the packaged commodity.

<sup>3</sup>Data for product code 3497034 included with product code 3497036.

TABLE 4. **Materials Consumed, by Kind: 1967 and 1963**

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3497.--METAL FOIL AND LEAF					
	Materials, parts, and supplies, total.....	.....	(X)	150.7	(X)	114.8
	Aluminum and aluminum-base alloy mill shapes and forms:					
335231	Plain foil.....	Million lbs.....	35.0	20.4	68.8	38.8
335203	Sheet and plate.....	...do.....	43.0	13.8	36.6	9.7
335209	All other aluminum mill shapes and forms (wire) rolled rod and bar, powder, welded tubing, extruded shapes, etc.....	...do.....				
349702	Aluminum foil, laminated <sup>1</sup> .....	...do.....	(X)	96.5	1.2	1.0
970099	All other materials and components, parts, containers, and supplies consumed.....	.....			(X)	62.9
973000	Materials, parts, and supplies, n.s.k. <sup>2</sup> .....	.....	(X)	20.0	(X)	2.4

n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Data on total consumption of aluminum foil are available, by end-use in Current Industrial Reports Series MA-34P, "Aluminum Foil Converted." The data in the Current Industrial Report include consumption by all establishments such as foil mills, foil converters, and others including food processing and other establishments converting foil for purposes of packaging a product. Data in this report are limited to establishments classified in the metal foil and leaf industry.

<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

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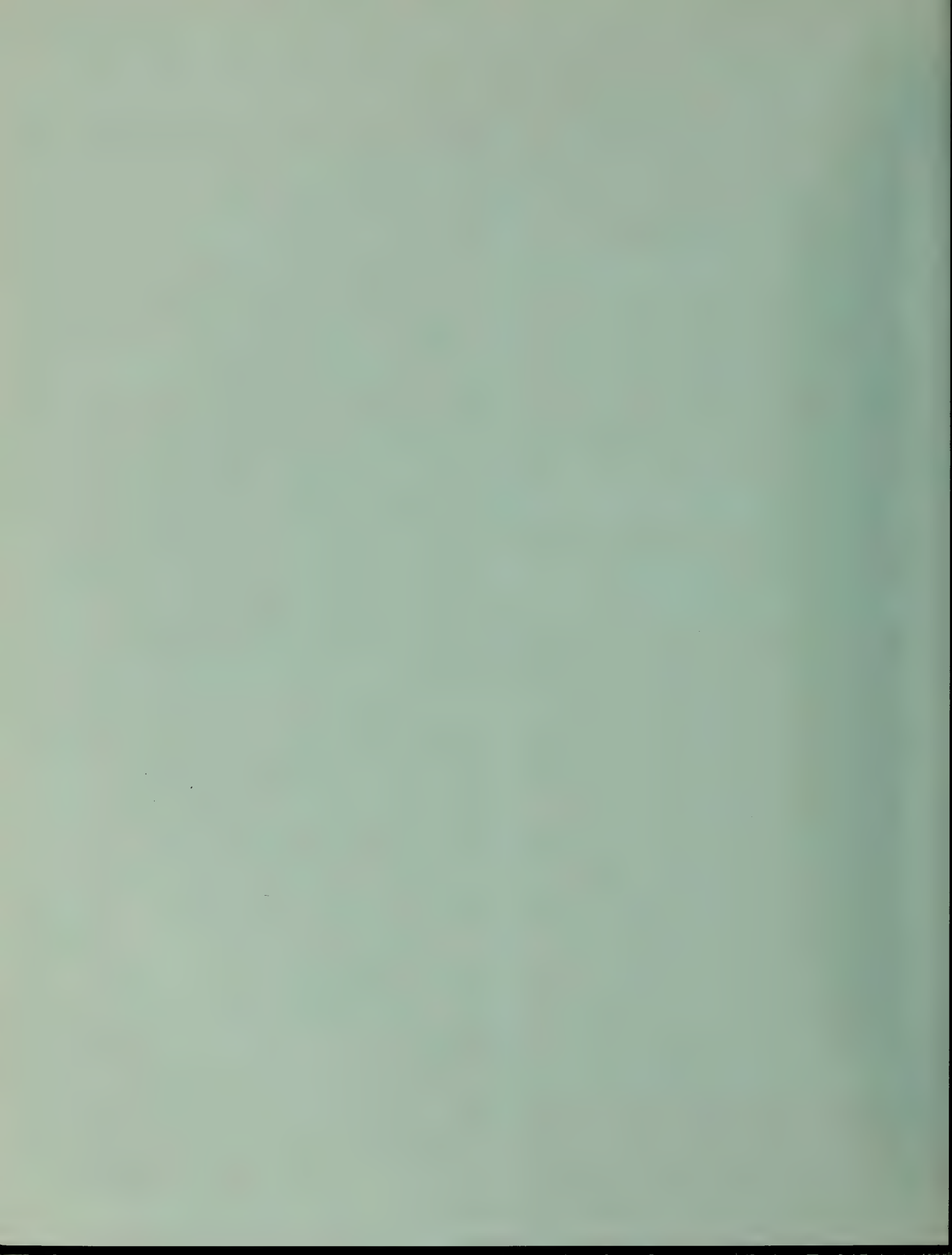
these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

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# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

**U.S. DEPARTMENT OF COMMERCE  
BUREAU OF THE CENSUS  
WASHINGTON, D.C. 20233**

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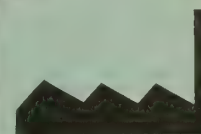




# 1967 CENSUS OF MANUFACTURES

MC67(P)-34E-8

MC67(P)-34E-9



## INDUSTRY SERIES

### Fabricated pipe and fittings

SIC Code 3498

**preliminary  
report**

The Fabricated Pipe and Fabricated Pipe Fittings Industry includes establishments primarily engaged in fabricating pipe and pipe fittings from purchased pipe, by cutting, threading, bending, etc. Establishments primarily engaged in manufacturing cast iron pipe and fittings, including cast and forged pipe fittings which have been machined and threaded, are classified in industry 3321; welded and heavy riveted pipe in industry 3317; and seamless steel pipe in industry 3317. Establishments primarily engaged in manufacturing products such as bannisters, railings and guards from pipe are classified in industry 3446.

The classification of establishments for which data are tabulated in this report is based upon

the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Fabricated Pipe and Fittings Industry amounted to \$495.2 million, an increase of 62 percent compared with 1963. Value added by manufacture at \$235.8 million in 1967 was 63 percent more than value added in 1963. Average employment in the industry showed an increase of 36 percent from 1963 to a total of 17.7 thousand employees in 1967.

Of the \$495.2 million total value of shipments and other receipts of establishments classified as fabricated pipe and fittings, \$33.0 million were products primary to other industries; and

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture  (million dollars)	Cost of materials  (million dollars)	Value of shipments  (million dollars)	Capital expenditures, new  (million dollars)	End-of-year inventories  (million dollars)	Specialization ratio  (percent)	Coverage ratio  (percent)
	Total  (number)	With 20 employees or more (number)	Number  (1,000)	Payroll  (million dollars)	Number  (1,000)	Man-hours  (millions)	Wages  (million dollars)							
INDUSTRY 3498.--FABRICATED PIPE AND FITTINGS														
1967 Census....	390	194	17.7	124.5	13.0	26.7	83.3	235.8	265.0	495.2	14.8	100.6	93	91
1966 ASM <sup>1</sup> .....	(NA)	(NA)	16.3	109.9	11.8	24.4	70.3	145.9	287.4	463.0	8.8	74.2	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	15.4	96.5	11.5	22.9	65.6	172.1	221.4	400.5	6.3	84.0	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	14.0	88.1	10.4	21.1	59.6	163.8	185.3	348.0	4.6	72.9	(NA)	(NA)
1963 Census.....	349	146	13.0	79.1	9.3	18.7	51.7	144.6	161.5	305.6	5.1	69.8	92	91
1962 ASM <sup>1</sup> .....	(NA)	(NA)	12.1	77.3	8.7	17.8	50.5	130.3	175.3	301.6	3.4	70.7	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	11.8	72.0	8.5	17.0	46.1	136.4	156.3	287.4	*5.2	70.1	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	13.5	77.5	9.7	19.9	50.7	124.3	178.5	305.0	5.2	73.4	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	13.3	78.0	9.7	20.0	50.2	143.4	185.9	327.1	5.5	79.3	(NA)	(NA)
1958 Census <sup>2</sup> ...	286	136	15.2	84.0	11.1	22.2	55.3	155.6	174.7	330.0	4.1	82.3	89	93

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 5 and 8, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued November 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

**BUREAU OF THE CENSUS** George Hay Brown, Director

\$45.2 million were receipts for miscellaneous activities. The industry shipments of primary products represented 93 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 92 percent in 1963.

The total value of fabricated pipe and fittings shipped by all producers in 1967 was \$457.1 million of which \$417.0 million, or 91 percent, were shipped by plants classified in industry

3498, Fabricated Pipe and Fittings, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 91 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3498.--FABRICATED PIPE AND FITTINGS												
United States, total.....	390	194	17.7	124.5	13.0	26.7	83.3	235.8	265.0	495.2	14.8	13.0	144.6
Northeast.....	109	56	5.7	38.5	3.7	7.2	22.1	70.9	80.2	148.8	3.0	5.2	60.3
Connecticut.....	6	4	0.2	1.3	0.1	0.3	1.0	2.2	2.3	4.4	0.1	(D)	(D)
New Jersey.....	21	13	1.0	7.3	0.8	1.6	4.4	13.6	19.1	32.2	(D)	1.5	15.9
Pennsylvania.....	47	27	3.2	23.3	1.9	3.5	12.2	44.9	43.9	86.4	1.1	2.5	32.5
East North Central....	102	55	4.8	31.5	3.9	8.0	22.7	58.1	70.0	125.6	6.3	3.6	42.2
Ohio.....	31	16	2.1	14.5	1.6	3.3	10.3	28.0	32.0	58.0	4.2	1.8	25.5
Illinois.....	26	15	1.1	6.8	0.9	2.1	5.2	12.5	17.8	29.9	1.2	0.4	3.9
Michigan.....	28	15	1.0	6.2	0.8	1.6	4.5	11.0	12.7	23.6	0.6	0.8	8.4
West North Central....	17	4	0.4	2.1	0.3	0.6	1.4	3.5	6.0	9.7	0.1	0.4	1.1
Kansas.....	4	1	0.1	0.7	0.1	0.2	0.4	1.1	1.4	2.5	0.1	(D)	(D)
South Atlantic.....	27	13	1.1	7.9	0.8	1.7	5.3	13.3	16.6	30.1	(D)	1.0	10.0
Florida.....	8	6	0.3	1.8	0.2	0.4	1.2	2.8	3.5	6.3	0.1	0.1	1.2
East South Central....	9	6	0.4	2.6	0.4	0.8	2.0	6.1	7.1	13.1	(D)	0.1	0.4
West South Central....	49	30	3.3	28.0	2.5	5.4	20.7	56.8	54.5	110.6	2.6	1.5	15.0
Texas.....	39	26	2.9	25.3	2.2	4.8	18.7	52.5	50.7	102.8	(D)	1.4	14.4
West.....	77	30	2.0	13.9	1.5	3.0	9.1	27.0	30.6	57.2	1.2	1.3	15.6
Oregon.....	8	3	0.4	2.5	0.3	0.5	1.6	5.5	5.5	10.6	(D)	(D)	(D)
California.....	57	23	1.3	9.6	1.0	2.1	6.3	18.8	22.7	41.4	0.5	0.9	12.2

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

## 1967 CENSUS OF MANUFACTURES

3

**TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963**

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3498- --	FABRICATED PIPE AND FITTINGS, TOTAL.....		(X)	457.1	(X)	286.5
34980 13	Iron and steel.....	1,000 short tons	(NA)	325.6	(NA)	201.5
34980 15	Aluminum and aluminum-base alloy.....	Million lbs....	(NA)	13.0	(NA)	13.4
34980 17	Copper and copper-base alloy.....	..do.....	(NA)	17.1	(NA)	(NA)
34980 19	All other nonferrous fabricated pipe and pipe fittings.....		(X)	35.2	(X)	40.8
34980 00	Fabricated pipe and fittings, n.s.k. (For establishments with 10 or more employees. See Note.).....		(X)	60.2	}	30.8
34980 02	Fabricated pipe and fittings, n.s.k. (For establishments with fewer than 10 employees. See Note.).....		(X)	5.0		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3498.--FABRICATED PIPE AND FITTINGS					
	Materials, parts, and supplies, total.....		(X)	231.7	(X)	141.7
	Mill shapes and forms, except castings:					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	12.8	3.0	14.4	3.3
331012	Sheet and strip.....	..do.....	17.4	2.9	21.2	3.2
331013	Plates.....	..do.....	19.7	3.9	3.5	0.7
331015	Structural shapes.....	..do.....	( <sup>1</sup> )	( <sup>1</sup> )	0.9	0.3
331017	Wire and wire products.....	..do.....	1.0	0.5	200.2	40.2
331019	All other carbon steel mill shapes and forms.....	..do.....	<sup>2</sup> 138.3	<sup>2</sup> 29.3		
	Alloy steel, except stainless:					
331021	Bars and bar shapes.....	..do.....	5.2	3.0	1.5	0.8
331029	All other alloy steel mill shapes and forms.....	..do.....	9.5	6.8	10.0	6.9
331031	Stainless steel.....	..do.....	3.5	6.5	2.8	5.4
	Copper and copper-base alloy:					
335790	Insulated wire and cable.....	Million lbs. (copper content)	0.2	0.2	(NA)	(NA)
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	1.5	1.4	0.8	0.5
335123	Plate, sheet, and strip, including military cups and discs...	..do.....				
335127	Pipe and tube.....	..do.....			( <sup>3</sup> )	( <sup>3</sup> )
	Aluminum and aluminum-base alloys:					
335202	Sheet, plate, and foil.....	..do.....	6.8	4.3	0.2	0.1
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	..do.....			4.9	3.2
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	..do.....			0.8	0.6
	Castings (rough and semifinished):					
332011	Iron (gray and malleable).....	1,000 short tons.	9.0	3.8	4.6	1.9
332300	Steel.....	..do.....	(NA)	6.6	1.3	1.2
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	( <sup>1</sup> )	( <sup>1</sup> )	1.2	0.7
336200	Copper and copper-base alloy.....	..do.....	( <sup>1</sup> )	( <sup>1</sup> )	0.7	0.4
339100	Iron and steel forgings <sup>4</sup> .....	1,000 short tons.	6.2	3.6	2.1	1.4
339200	Aluminum and aluminum-base alloy forgings.....	Million lbs.....	0.1	0.1	(NA)	(NA)
349401	Valves and pipe fittings, except plumbers' brass goods and fittings.....		(X)	22.9	(X)	9.9
333010	Nonferrous plating metals (chromium, nickel, zinc, etc.).....		(X)	0.5	(X)	0.8
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	89.6	(X)	30.9
973000	Materials, parts, and supplies, n.s.k. <sup>5</sup> .....		(X)	42.8	(X)	22.4

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Included with material code 331019 "All other carbon steel mill shapes and forms." The value for this item is less than \$2.5 million.<sup>2</sup>These figures are understated by \$45.0 million or less because of apparent under coverage of carbon steel pipe and tube.<sup>3</sup>Included with material code 970099 "All other materials and components."<sup>4</sup>Does not include tonnages of castings produced and consumed in the same establishment.<sup>5</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3498, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

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**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

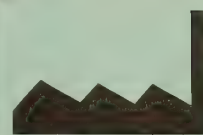
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

### Fabricated metal products, n.e.c.

SIC Code 3499

**preliminary  
report**

The Fabricated Metal Products, Not Elsewhere Classified, Industry includes establishments primarily engaged in manufacturing fabricated metal products not elsewhere classified. Establishments primarily engaged in manufacturing advertising novelties are classified in industry 3993.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Fabricated Metal Products, N.E.C., Industry amounted to \$957.6 million, an increase of 67 percent compared with 1963. Value added

by manufacture at \$505.7 million in 1967 was 69 percent more than value added in 1963. Average employment in the industry showed an increase of 45 percent from 1963 to a total of 40.9 thousand employees in 1967.

Of the \$957.6 million total value of shipments and other receipts of establishments classified as fabricated metal products, n.e.c., \$114.4 million were products primary to other industries; and \$54.6 million were receipts for miscellaneous activities. The industry shipments of primary products represented 87 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 89 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3499.--FABRICATED METAL PRODUCTS, N.E.C.														
1967 Census....	1,265	463	40.9	257.0	32.5	65.5	174.1	505.7	455.4	957.6	34.8	143.8	87	70
1966 ASM <sup>1</sup> .....	(NA)	(NA)	37.3	229.4	29.7	59.5	155.7	441.2	429.9	850.3	*30.0	132.6	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	31.0	184.1	24.3	50.5	126.9	353.9	355.6	704.8	26.4	105.6	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	31.3	176.1	24.7	51.1	119.6	318.4	326.2	655.8	21.5	86.8	(NA)	(NA)
1963 Census....	1,277	346	28.3	151.9	22.2	45.7	105.1	299.3	276.3	573.2	16.2	91.6	89	62
1962 ASM <sup>1</sup> .....	(NA)	(NA)	24.1	130.8	18.3	39.1	84.4	237.9	238.4	469.2	*16.6	71.4	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	21.2	112.8	15.8	33.8	69.8	204.0	198.8	401.6	10.7	61.9	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	22.5	112.4	17.0	36.2	72.6	199.8	205.9	403.7	12.6	67.6	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	23.0	108.6	17.9	34.1	73.1	212.3	188.0	397.9	(S)	62.9	(NA)	(NA)
1958 Census <sup>2</sup> ....	974	213	20.2	93.2	15.6	29.8	62.7	180.1	160.4	340.1	11.4	59.2	86	62

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

(S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 4 and 2, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued December 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**



The total value of fabricated metal products, n.e.c., shipped by all producers in 1967 was \$1,127.4 million of which \$788.6 million, or 70 percent, were shipped by plants classified in industry 3499, Fabricated Metal Products, N.E.C., while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 62 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3499.--FABRICATED METAL PRODUCTS, N.E.C.												
United States, total.....	1,265	463	40.9	257.0	32.5	65.5	174.1	505.7	455.4	957.6	34.8	28.3	299.3
New England.....	102	42	3.5	23.9	2.5	5.3	14.4	43.1	32.0	74.2	5.9	2.4	22.3
Massachusetts.....	51	21	1.6	10.6	1.2	2.4	6.5	18.7	12.2	30.6	5.0	0.9	9.6
Rhode Island.....	13	2	0.6	4.4	0.4	0.9	2.2	7.3	3.9	11.0	0.3	0.6	5.1
Connecticut.....	31	17	1.2	8.3	0.9	1.9	5.2	16.0	15.1	30.7	0.6	0.8	6.6
Middle Atlantic.....	364	117	9.3	54.3	7.6	15.2	37.6	98.5	81.1	179.9	4.0	6.7	62.4
New York.....	205	59	3.9	22.0	3.3	6.4	15.6	40.4	31.4	71.7	1.2	3.6	33.9
New Jersey.....	79	22	2.2	13.4	1.8	3.7	8.9	22.4	17.7	40.0	1.1	1.2	11.2
Pennsylvania.....	80	39	3.2	18.8	2.5	5.1	13.1	35.8	32.1	68.2	1.8	2.0	17.3
East North Central....	350	146	15.1	102.8	11.7	23.7	69.1	210.3	195.9	405.9	15.7	11.5	127.8
Ohio.....	83	41	4.0	28.1	2.9	5.7	17.6	53.5	55.8	108.6	1.6	1.9	19.1
Indiana.....	28	13	1.5	10.5	1.1	2.4	7.4	20.8	17.7	38.6	1.5	1.5	15.8
Illinois.....	133	50	5.7	38.4	4.6	9.2	26.4	89.1	84.1	173.0	9.8	4.8	58.4
Michigan.....	77	31	3.3	22.0	2.6	5.4	15.0	39.2	30.1	70.1	2.4	3.0	29.8
Wisconsin.....	29	11	0.6	3.9	0.5	1.0	2.7	7.7	8.2	15.7	0.4	0.5	4.8
West North Central....	74	30	2.7	16.5	2.1	4.3	11.2	28.3	29.9	59.1	1.8	2.0	19.6
Minnesota.....	18	11	1.0	6.4	0.8	1.6	4.5	10.7	9.4	20.2	0.6	0.9	9.2
Missouri.....	24	12	1.2	6.8	0.9	1.8	4.4	13.4	12.4	25.7	0.7	(D)	(D)
Kansas.....	11	2	0.1	0.3	0.1	0.1	0.3	0.7	0.8	1.6	(Z)	(D)	(D)
South Atlantic.....	91	31	2.5	13.5	2.2	4.4	10.4	44.4	40.7	83.5	1.1	1.7	26.4
Virginia.....	12	5	0.4	1.8	0.3	0.6	1.3	4.3	4.7	9.0	0.2	(D)	(D)
North Carolina.....	7	2	0.2	0.6	0.1	0.3	0.5	1.2	0.6	1.8	(Z)	(D)	(D)
Florida.....	35	8	0.4	2.0	0.3	0.6	1.4	4.8	5.6	10.3	0.2	0.3	2.6
East South Central....	31	14	1.9	9.4	1.6	3.2	6.5	15.9	16.7	32.3	1.6	0.5	5.3
Alabama.....	5	4	0.2	0.9	0.2	0.4	0.6	1.7	2.2	3.9	(D)	(D)	(D)
West South Central....	63	19	1.5	7.7	1.3	2.5	5.7	13.1	14.1	27.0	0.8	1.0	7.5
Oklahoma.....	12	7	0.5	2.4	0.4	0.7	1.7	4.5	5.0	9.4	0.2	(D)	(D)
Texas.....	42	8	0.6	3.7	0.5	1.1	2.8	6.4	7.2	13.6	0.2	0.5	2.8
West.....	190	61	4.3	28.9	3.5	6.8	19.1	51.9	45.0	95.7	3.9	2.5	28.0
Montana.....	4	2	0.1	0.7	0.1	0.1	0.5	0.3	0.9	1.2	(D)	(D)	(D)
California.....	144	49	3.6	24.7	2.8	5.6	15.9	44.6	37.9	81.3	2.7	2.1	23.9

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher level totals.

(Z) Less than \$50 thousand.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3499- --	FABRICATED METAL PRODUCTS, N.E.C., TOTAL.....		(X)	1,127.4	(X)	753.4
	Metal ladders:					
34990 43	Step and platform types.....	1,000 units...	(NA)	11.6	628.4	15.9
34990 45	Extension, straight, trestle, and trestle-extension ladders....	...do.....	607.3	9.5		
34990 54	Metal ironing boards.....	...do.....	2,468.2	12.7	2,213.6	12.9
34990 55	Permanent magnets.....	...do.....	(X)	58.1	(X)	36.8
34990 56	Fabricated assemblies of railroad frogs, switches, and crossings..	1,000 short tons.....				
		...do.....	188.6	76.0	173.9	53.8
34990 57	Metal strapping, flat.....	...do.....	470.7	146.5	297.6	82.2
34990 58	Cast metal memorial tablets and grave markers.....	...do.....	(X)	10.9	(X)	465.2
34990 59	Other fabricated metal products, n.e.c. (including metal ammunition boxes and chests).....	...do.....	(X)	634.9		
34990 00	Fabricated metal products, n.e.c., n.s.k. (For establishments with 10 or more employees. See Note.).....	...do.....	(X)	147.4	(X)	86.8
34990 02	Fabricated metal products, n.e.c., n.s.k. (For establishments with fewer than 10 employees. See Note.).....	...do.....	(X)	19.8		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.e.c. Not elsewhere classified. n.s.k. Not specified by kind. (X) Not applicable.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3499.--FABRICATED METAL PRODUCTS, N.E.C.					
	Materials, parts, supplies, etc., total.....		(X)	401.2	(X)	236.0
	Mill shapes and forms, except castings:					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	94.4	16.5	41.4	6.5
331012	Sheet and strip.....	..do.....	580.4	90.8	303.1	47.8
331013	Plates.....	..do.....	52.5	7.8	23.5	3.5
331015	Structural shapes.....	..do.....	18.0	2.8	15.6	2.3
331017	Wire and wire products.....	..do.....	12.5	3.6	8.4	2.3
331019	All other carbon steel mill shapes and forms.....	..do.....	<sup>1</sup> 34.9	<sup>1</sup> 6.5	36.1	7.7
	Alloy steel, except stainless:					
331021	Bars and bar shapes.....	..do.....	2.8	1.4	2.4	1.1
331029	All other alloy steel mill shapes and forms.....	..do.....	4.8	2.9	26.5	4.4
331031	Stainless steel.....	..do.....	5.3	7.7	2.8	3.5
	Copper and copper-base alloy:					
335790	Insulated wire and cable.....	Million lbs. (copper content)	1.9	1.3	(NA)	(NA)
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	1.0	0.8	1.6	0.7
335123	Plate, sheet, and strip, including military cups and discs...	..do.....	4.1	3.0	2.2	1.2
335127	Pipe and tube.....	..do.....	( <sup>2</sup> )	( <sup>2</sup> )	2.4	1.4
	Aluminum and aluminum-base alloys:					
335202	Sheet, plate and foil.....	..do.....	54.7	25.5	6.9	3.6
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	..do.....	17.3	10.4	10.9	5.7
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	..do.....	3.1	1.9	3.1	1.4
	Castings (rough and semifinished): <sup>3</sup>					
332011	Iron (gray and malleable).....	1,000 short tons.	10.7	4.8	4.8	1.9
332300	Steel.....	..do.....	16.5	11.2	5.0	3.2
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	3.2	3.0	1.5	1.3
336200	Copper and copper-base alloy.....	..do.....	1.8	1.3	1.8	1.1
339100	Iron and steel forgings <sup>3</sup> .....	1,000 short tons.	1.9	1.3	0.7	0.4
339200	Aluminum and aluminum-base alloy forgings <sup>3</sup> .....	Million lbs.....	1.3	1.4	(NA)	(NA)
349401	Valves and pipe fittings, except plumbers' brass goods and fittings.....	.....	(X)	0.7	(X)	0.2
333010	Nonferrous plating metals (chromium, nickel, zinc, etc.).....	.....	(X)	3.1	(X)	2.3
970099	All other materials and components, parts, containers, and supplies consumed.....	.....	(X)	137.1	(X)	81.8
976000	Materials, containers, supplies, n.s.k. <sup>4</sup> .....	.....	(X)	54.4	(X)	50.8

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>These figures are understated by \$10 million or less because of apparent undercoverage of carbon steel pipe and tube.<sup>2</sup>Included with material code 970099 "All other materials, components, etc."<sup>3</sup>No data are available on the quantities of castings or forgings produced and consumed in the same establishment.<sup>4</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3499, these small establishments accounted for approximately 2 percent of payrolls and 3 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--** All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--** This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--** This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--** The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--** In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--** The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



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**OFFICIAL BUSINESS**

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

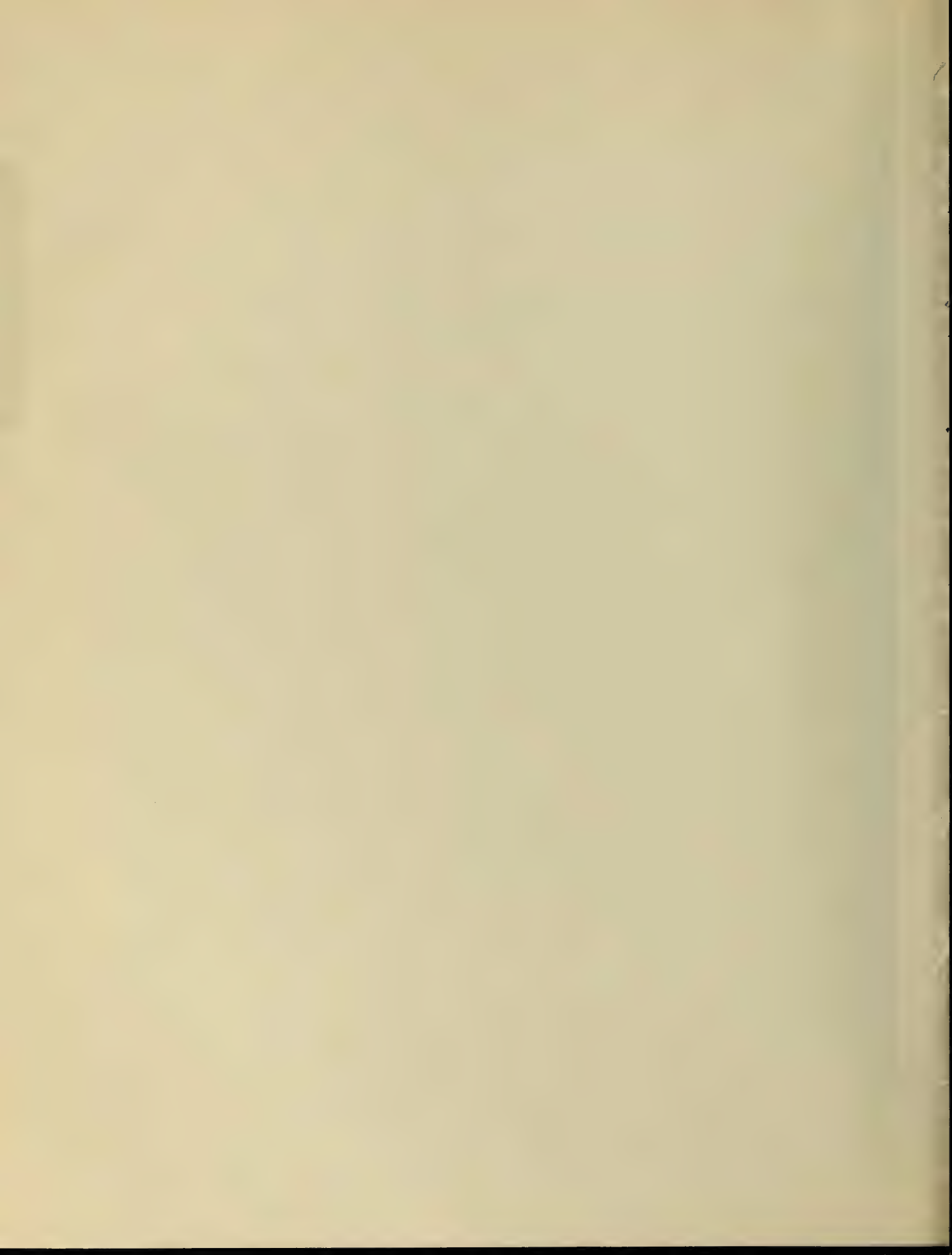
the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



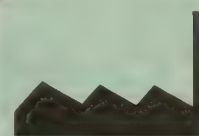






# 1967 CENSUS OF MANUFACTURES

MC67(P)-35A-1



## INDUSTRY SERIES

**preliminary  
report**

### Steam engines and turbines

SIC Code 3511

Steam Engines; Steam, Gas, and Hydraulic Turbines; and Steam, Gas, and Hydraulic Turbine Generator Set Units Industry includes establishments primarily engaged in manufacturing steam engines; steam turbines; hydraulic turbines; gas turbines except aircraft; and complete steam, gas, and hydraulic turbine generator set units. Establishments primarily engaged in building or rebuilding locomotives are classified in industry 3741; and those manufacturing nonautomotive type generators which are not part of a turbine generator set in industry 3621.

the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Steam Engines and Turbines Industry amounted to \$1,043.2 million, an increase of 69 percent compared with 1963. Value added by manufacture at \$582.8 million in 1967 was 53 percent more than value added in 1963. Average employment in the industry showed an increase of 16 percent from 1963 to a total of 36.2 thousand employees in 1967.

The classification of establishments for which data are tabulated in this report is based upon

Of the \$1,043.2 million total value of shipments and other receipts of establishments classi-

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3511.--STEAM ENGINES AND TURBINES														
1967 Census....	27	23	36.2	318.9	24.6	49.9	195.7	582.8	475.0	1,043.2	66.2	314.2	83	83
1966 ASM <sup>1</sup> .....	(NA)	(NA)	34.4	299.5	23.8	49.7	192.6	504.8	424.3	867.2	33.8	316.1	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	34.6	285.1	23.8	47.8	182.1	477.0	351.1	793.9	29.3	253.8	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	32.6	264.0	21.7	42.4	164.4	458.4	296.3	744.8	14.2	201.3	(NA)	(NA)
1963 Census....	22	21	30.9	237.5	19.9	38.9	141.7	379.9	242.7	616.4	19.4	176.2	85	82
1962 ASM <sup>1</sup> .....	(NA)	(NA)	33.1	245.6	21.1	41.3	145.2	408.4	252.7	657.7	16.7	185.5	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	33.8	238.5	21.1	41.1	138.0	420.0	251.1	696.0	19.0	167.6	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	36.6	244.9	23.4	44.7	142.8	505.5	260.7	758.3	16.5	192.3	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	40.3	260.0	25.5	50.0	155.1	497.6	287.5	814.0	18.7	205.3	(NA)	(NA)
1958 Census <sup>2</sup> ...	28	25	45.3	274.6	29.3	57.8	172.1	568.6	361.1	961.8	20.5	236.0	78	94

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

**BUREAU OF THE CENSUS** George Hay Brown, Director

fied as steam engines and turbines, \$168 million were products primary to other industries; and \$45 million were receipts for miscellaneous activities. The industry shipments of primary products represented 83 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 85 percent in 1963.

The total value of steam engines and turbines shipped by all producers in 1967 was \$1,001.4 million of which \$830 million, or 83 percent, were shipped by plants classified in industry

3511, Steam Engines and Turbines, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 82 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

## **TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963**

(Geographic data for this industry will not be published separately)

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers					
		1967			1963		
		Number of units	Total	Value (million dollars)	Number of units	Total	Value (million dollars)
			Generating capacity (1,000 kw)			Generating capacity (1,000 kw)	
3511- --	STEAM ENGINES AND TURBINES, TOTAL.....	(X)	(X)	1,001.4	(X)	(X)	589.1
35111 --	Steam, gas, and hydraulic turbine generator set units and parts.....	(X)	(X)	1,001.4	(X)	(X)	589.1
35112 --	Steam, gas, and hydraulic turbines and parts.....						
	Steam turbine generator sets:	(X)	(X)	684.4	372	17,533	289.0
35111 13	Under 33,000 kw.....						
35111 19	33,000 to 49,999 kw.....						
35111 21	50,000 to 99,999 kw.....						
35111 24	100,000 to 199,999 kw.....						
35111 35	200,000 kw and over.....						
35111 41	Hydraulic turbine generator sets (all sizes).....	(X)	(X)	684.4	(X)	(X)	1146.7
35111 50	Gas turbine generator sets.....				(X)	(X)	
35111 51	Parts for generator set units (steam, gas, and hydraulic).....				(X)	(X)	
35112 72	Parts and accessories for steam engines and steam turbines.....				(X)	(X)	
			Horsepower capacity (1,000 hp.)			Horsepower capacity (1,000 hp.)	
35112 03	Mechanical drive steam turbines and gear turbines, including the value of the gear: Marine and Navy.....	390	2,018.8	69.5	343	1641.0	46.8
	Number shipped by horsepower capacity (rated or normal):	321	(X)	(X)	343	(X)	(X)
35112 05	Under 50 hp.....						
35112 06	50 to 499 hp.....						
35112 07	500 to 999 hp.....						
35112 08	1,000 to 9,999 hp.....						
35112 09	10,000 hp. and over.....	69	(X)	(X)			
35112 13	Land.....	5,445	2,155.3	43.2	237.5	981.0	18.2
	Number shipped by horsepower capacity (rated or normal):	226	(X)	(X)	10	(X)	(X)
35112 15	Under 50 hp.....						
35112 16	50 to 499 hp.....						
35112 17	500 to 999 hp.....						
35112 18	1,000 to 9,999 hp.....						
35112 19	10,000 hp. and over.....						
35112 61	Hydraulic turbines (all sizes).....	51	(NA)	30.4	(1)	(1)	(1)
35112 71	Parts and accessories for hydraulic turbines.....	(X)	(X)	13.3	(X)	(X)	(1)
	Gas turbines (except aircraft):	3,447	(NA)	116.7	133.3	(NA)	61.6
35112 75	Under 10,000 hp.....						
35112 77	10,000 hp. and over.....						
35112 81	Parts and accessories for gas turbines (except aircraft).....	(X)	(X)	43.9	(X)	(X)	10.7

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. (X) Not applicable.

<sup>1</sup>1963 data for hydraulic turbines and parts and accessories for hydraulic turbines are included with hydraulic turbine generator sets, gas turbine generator sets and parts for generator set units.



## 1967 CENSUS OF MANUFACTURES

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963			
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)		
	INDUSTRY 3511.--STEAM ENGINES AND TURBINES							
	Materials, parts, containers, and supplies, total.....		(X)	431.1	(X)	219.1		
	Mill shapes and forms (except castings):							
	Carbon steel:							
331011	Bars and bar shapes.....	1,000 short tons.	158.2	62.3	10.0	1.8		
331012	Sheet and strip.....	do.....			18.6	3.7		
331013	Plates.....	do.....			70.9	9.6		
331015	Structural shapes.....	do.....			4.4	0.7		
331019	All other carbon steel mill shapes and forms.....	do.....			4.7	2.0		
	Alloy steel (except stainless):							
331021	Bar and bar shapes.....	do.....	158.2	62.3	3.7	2.4		
331029	All other alloy steel mill shapes and forms.....	do.....			4.0	4.1		
331031	Stainless steel mill shapes and forms.....	do.....			7.2	9.7		
	Copper and copper-base alloy mill shapes and forms:							
335728	Bare wire (for electrical conduction).....	Million lbs.....	( <sup>1</sup> )	( <sup>1</sup> )	8.6	4.0		
335790	Insulated wire and cable.....	Million lbs (copper content)	( <sup>1</sup> )	( <sup>1</sup> )				
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	158.2	62.3	11.7	6.8		
335123	Plate, sheet, and strip, including military cups and discs..	do.....			( <sup>1</sup> )	( <sup>1</sup> )	1.7	0.9
335127	Pipe and tube.....	do.....			( <sup>1</sup> )	( <sup>1</sup> )	2.6	1.9
335208	Aluminum and aluminum-base alloy mill shapes and forms.....	do.....	( <sup>1</sup> )	( <sup>1</sup> )	0.6	0.3		
333401	Aluminum and aluminum-base alloy refinery shapes.....	1,000 short tons.	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )		
	Castings (rough and semifinished): <sup>2</sup>							
332011	Iron (gray and malleable).....	do.....	13.2	8.5	10.2	5.7		
332300	Steel.....	do.....	( <sup>1</sup> )	( <sup>1</sup> )	19.7	25.0		
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	( <sup>1</sup> )	( <sup>1</sup> )	0.4	0.4		
336200	Copper and copper-base alloy.....	do.....	2.5	2.7	2.8	3.0		
339100	Iron and steel forgings <sup>2</sup> .....	1,000 short tons.	( <sup>1</sup> )	( <sup>1</sup> )	16.6	31.5		
362120	Integral horsepower motors and generators (1 hp. and over) <sup>2</sup> .....	1,000.....	( <sup>1</sup> )	( <sup>1</sup> )	1.9	9.6		
	Bearings:							
356218	Ball.....	do.....	(X)	1.0	(X)	0.3		
356201	Roller.....	do.....	(X)	0.6	(X)	0.1		
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	336.5	(X)	94.9		
976000	Materials, parts, containers, and supplies, n.s.k. <sup>3</sup> .....		(X)	19.5	(X)	0.6		

n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Included with materia code 970099, "All other materials and components, etc." to avoid disclosing figures for individual companies.<sup>2</sup>No data are available on the quantities of castings, iron and steel forgings, or integral horsepower electric motors or generators produced and consumed in the same establishment except for 1963 for copper and copper base alloy castings (0.6 million pounds) and iron and steel forgings (0.4 thousand short tons).<sup>3</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. There were no such small establishments in this industry.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

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**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

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**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

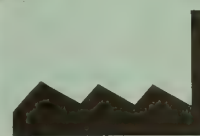
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-35A-2

## INDUSTRY SERIES

**preliminary  
report**

### Internal combustion engines, n.e.c.

SIC Code 3519

The Internal Combustion Engines, Not Elsewhere Classified, Industry includes establishments primarily engaged in manufacturing diesel, semidiesel, or other internal combustion engines, not elsewhere classified, for stationery, marine, traction, and other uses. Establishments primarily engaged in manufacturing aircraft engines, including rocket engines, are classified in Industry 3722, automotive engines except diesel in industry 3714, and engine generator sets in industry 3621.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classi-

fied in the Internal Combustion Engines, N.E.C., Industry amounted to \$2,079.3 million, an increase of 41 percent compared with 1963. Value added by manufacture at \$1,008.1 million in 1967 was 37 percent more than value added in 1963. Average employment in the industry showed an increase of 13 percent from 1963 to a total of 63.1 thousand employees in 1967.

Of the \$2,079.3 million total value of shipments and other receipts of establishments classified as internal combustion engines, n.e.c., \$234 million were products primary to other industries; and \$64 million were receipts for miscellaneous activities. The industry shipments of primary products represented 88 percent of the total manufactured product shipments, primary and sec-

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)
INDUSTRY 3519.--INTERNAL COMBUSTION ENGINES, N.E.C.														
1967 Census....	153	94	63.1	497.4	47.1	96.4	342.8	1,008.1	1,085.3	2,079.3	97.4	409.9	88	81
1966 ASM <sup>1</sup> .....	(NA)	(NA)	64.1	494.0	48.1	102.3	349.4	1,074.7	1,041.4	2,052.5	71.8	402.7	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	59.2	426.7	44.5	89.5	292.4	912.9	888.6	1,768.8	58.8	343.4	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	58.2	402.4	42.1	85.6	268.4	823.3	830.2	1,622.2	45.9	310.8	(NA)	(NA)
1963 Census....	143	81	55.7	371.8	41.8	85.0	260.0	733.6	745.8	1,473.6	34.8	279.3	86	85
1962 ASM <sup>1</sup> .....	(NA)	(NA)	53.1	335.5	41.1	78.5	231.2	623.3	708.4	1,316.9	30.2	257.0	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	46.1	280.9	40.2	65.3	184.1	501.0	561.8	1,080.0	32.0	231.3	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	50.0	297.5	43.6	71.2	199.0	520.4	612.2	1,158.5	24.7	240.1	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	55.9	336.6	42.7	84.4	229.0	656.1	682.9	1,296.8	35.6	282.2	(NA)	(NA)
1958 Census <sup>2</sup> ...	113	76	52.0	286.8	42.6	72.6	191.0	520.4	552.3	1,055.8	50.6	230.7	90	82

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued November 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**



ondary. This percent, called the specialization ratio for the industry, was 86 percent in 1963.

The total value of internal combustion engines, n.e.c., shipped by all producers in 1967 was \$2,192.0 million of which \$1,781 million, or 81 percent, were shipped by plants classified in industry 3519, Internal Combustion Engines, N.E.C., while the remainder was shipped by plants classified in other industries. This per-

cent, called the coverage ratio, was 85 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3519, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-35L, Internal Combustion Engines.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

(See appendix, "Explanation of Terms.")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
INDUSTRY 3519.--INTERNAL COMBUSTION ENGINES, N.E.C.													
United States, total,.....	153	94	63.1	497.4	47.1	96.4	342.8	1,008.1	1,085.3	2,079.3	97.4	55.7	733.6
Florida.....	6	1	0.1	0.4	0.1	0.1	0.3	0.8	0.6	1.4	(Z)	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000 of engines)	Value (million dollars)	Quantity (1,000 of engines)	Value (million dollars)
3519- --	INTERNAL COMBUSTION ENGINES, N.E.C., TOTAL.....	(X)	2,192.0	(X)	1,423.9
35191 00	Gasoline engines, under 11 horsepower, except outboard, aircraft, automobile, truck, bus, and tank:				
	As reported in the census of manufactures <sup>1</sup> .....	(X)	<sup>2</sup> 210.1	(X)	<sup>2</sup> 270.1
	As reported on Census annual Form MA-35L <sup>1</sup> .....	<sup>3</sup> 8,378.6	<sup>2</sup> 3428.1	<sup>3</sup> 6,285.0	<sup>2</sup> 267.4
35192 00	Gasoline engines, 11 horsepower and over, except outboard, aircraft, automobile, truck, bus, and tank:				
	As reported in the census of manufactures <sup>1</sup> .....	(X)	<sup>2</sup> 171.4	(X)	( <sup>3</sup> )
	As reported on Census annual Form MA-35L <sup>1</sup> .....	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
35193 00	Diesel engines (except for trucks and buses): <sup>4</sup>				
	As reported in the census of manufactures <sup>1</sup> .....	(X)	447.2	(X)	298.9
	As reported on Census annual Form MA-35L <sup>1</sup> .....	163.3	439.7	108.5	289.2
35194 00	Diesel engines (for trucks and buses): <sup>4</sup>				
	As reported in the census of manufactures <sup>1</sup> .....	(X)	233.2	65.1	165.5
	As reported on Census annual Form MA-35L <sup>1</sup> .....	(X)	233.7	(NA)	(NA)
35196 00	Gas engines (except gas turbines):				
	As reported in the census of manufactures <sup>1</sup> .....	(X)	22.6	(X)	22.1
	As reported on Census annual Form MA-35L <sup>1</sup> .....	10.2	21.9	6.3	22.3
35195 --	Outboard motors.....				
35197 --	Tank and converted internal combustion engines <sup>6</sup> .....	(X)	285.5	(X)	<sup>5</sup> 183.8
35199 15	Parts and accessories for internal combustion engines (except aircraft, and automotive engines and gas turbines).....	(X)	805.3	(X)	480.6
35190 00	Internal combustion engines, n.s.k. (For companies with 10 or more employees. See Note.).....	(X)	14.3		
35190 02	Internal combustion engines, n.s.k. (For companies with less than 10 employees. See Note.).....	(X)	1.4	(X)	2.9

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.e.c. Not elsewhere classified. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>For these products, data were also collected on Annual Form MA-35L, Internal Combustion Engines. In lieu of asking for detailed statistics on these products in the census of manufactures, respondents were asked to report only value of shipments for specified classes of products for which separate figures had previously been collected on the annual form. In most cases, the value figures reported in the census of manufactures for each class of products agreed closely with the corresponding figures reported in the annual survey. However, there were some differences between the census figures and the annual survey figures. These variations were due primarily to the following reasons:

- Use of different reporting periods (calendar year vs. fiscal year.)
- Use of different bases for reporting value (company sales vs. factory production.)
- Use of estimates in reporting data on the annual survey, whereas census of manufactures figures generally represent more exact shipments figures.

See Current Industrial Reports Series MA-35L for detailed product data.

<sup>2</sup>1967 data on Census annual form MA-35L include basic engines (short block engines), primarily automotive type, shipped for conversion to marine or other nonautomotive uses. Such automotive gasoline engines are included with automotive parts and accessories (product class 37141) in the 1967 Census of Manufactures. Engines after conversion to nonautomotive uses are included in product class 35197.

<sup>3</sup>Product codes 3519100, "gasoline engines under 11 h.p., etc." and 3519200, "gasoline engines, 11 h.p. and over, etc." are combined.

<sup>4</sup>For 1967, dual-fuel engines are included with diesel engines. For 1963, dual-fuel engines are included in product class 35197.

<sup>5</sup>Includes dual-fuel engines valued at \$3.1 million.

<sup>6</sup>Includes engines converted from purchased engines or from engines received from another plant of the same company.

## 1967 CENSUS OF MANUFACTURES

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3519.--INTERNAL COMBUSTION ENGINES, N.E.C.					
	Materials, parts, containers, and supplies, total.....		(X)	1,0356.6	(X)	694.1
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons..	47.6	11.5	32.6	6.8
331012	Sheet and strip.....	..do.....	98.2	20.0	42.3	9.2
331013	Plates.....	..do.....	11.0	2.1	15.0	2.2
331015	Structural shapes.....	..do.....	1.7	0.4	3.3	0.6
331019	All other carbon steel mill shapes and forms.....	..do.....	5.1	1.6	4.1	1.4
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	..do.....	9.0	3.8	9.7	2.9
331029	All other alloy steel mill shapes and forms.....	..do.....			1.9	0.8
331031	Stainless steel mill shapes and forms.....	..do.....	2.8	3.6	1.6	1.7
	Copper and copper-base alloy mill shapes and forms:					
335728	Bare wire (for electrical conduction only).....	Million lbs.....	(D)	(D)	1.3	1.3
335790	Insulated wire and cable.....	Million lbs. copper content..	2.5	2.9		
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	7.7	6.8	0.5	0.3
335123	Plate, sheet, and strip, including military cups and discs..	..do.....			13.1	5.6
335127	Pipe and tube.....	..do.....	(NA)	1.6	1.5	1.3
335208	Aluminum and aluminum-base alloy mill shapes and forms.....	..do.....	(D)	(D)	(D)	(D)
333401	Aluminum and aluminum-base alloy refinery shapes.....	1,000 short tons..	(D)	(D)	(D)	(D)
999808	Aluminum and aluminum-base alloy scrap (excluding home scrap)...	..do.....	(D)	(D)	(D)	(D)
	Castings (rough and semifinished): <sup>1</sup>					
332011	Iron (gray and malleable).....	..do.....	295.3	128.6	161.3	62.3
332300	Steel.....	..do.....	5.8	2.8	2.0	2.0
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	71.0	48.1	34.3	24.4
336200	Copper and copper-base alloy.....	..do.....	(D)	(D)	1.1	0.8
339100	Iron and steel forgings <sup>1</sup> .....	1,000 short tons..	65.5	31.0	52.9	25.2
362120	Integral horsepower motors and generators (1 h.p. and over <sup>1</sup> )....	1,000.....	98.6	16.0	78.2	15.1
	Bearings:					
356218	Ball.....	.....	(X)	5.5	(X)	3.3
356201	Roller.....	.....	(X)	3.1	(X)	2.1
970099	All other materials and components, parts, containers, and supplies consumed.....	.....	(X)	662.5	(X)	489.4
976000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> .....	.....	(X)	83.7	(X)	35.4

(D) Included with material code 970099, "All other materials and components, etc." to avoid disclosing figures for individual companies.

n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>No data are available on the quantities of castings, iron and steel forgings, or integral horsepower motors and generators except for 1963 for iron castings which totaled 38.2 thousand short tons.<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3519, these small establishments accounted for approximately 0.1 percent of payrolls and 0.1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

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**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# 1967 CENSUS OF MANUFACTURES



MC67(P)-35A-3

## INDUSTRY SERIES

**preliminary  
report**

### Farm machinery

SIC Code 3522

The Farm Machinery and Equipment Industry includes establishments primarily engaged in manufacturing farm machinery, including equipment and wheel tractors, for use in the preparation and maintenance of the soil; planting and harvesting of the crop; preparing, on the farm, crops for market; or for use in performing other farm operations and processes. This industry includes wheel tractors, except contractors' off-highway type, which are classified in industry 3531. Establishments primarily engaged in manufacturing industrial trucks, tractors, and trailers used for handling materials in industrial plants, depots, and docks are classified in industry 3537; and farm handtools in Group 342.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Farm Machinery Industry amounted to \$4,231.8 million, an increase of 49 percent compared with 1963. Value added by manufacture at \$2,016.0 million in 1967 was 52 percent more than value added in 1963. Average employment in the industry showed an increase of 19 percent from 1963 to a total of 134.2 thousand employees in 1967.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Special-ization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
INDUSTRY 3522.--FARM MACHINERY														
1967 Census....	1,615	659	134.2	931.3	102.4	199.8	650.6	2,016.0	2,280.8	4,231.8	127.2	985.4	94	95
1966 ASM <sup>1</sup> .....	(NA)	(NA)	137.3	966.3	105.2	213.7	679.4	2,057.1	2,362.2	4,332.0	108.9	927.2	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	123.2	819.0	93.9	188.7	573.1	1,682.3	1,867.8	3,532.6	86.7	800.8	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	118.6	769.9	90.2	181.9	538.3	1,526.1	1,745.2	3,204.1	83.6	748.0	(NA)	(NA)
1963 Census....	1,568	558	112.6	689.1	84.6	168.9	476.8	1,328.4	1,536.8	2,842.2	64.4	669.3	89	95
1962 ASM <sup>1</sup> .....	(NA)	(NA)	106.2	618.2	77.1	151.7	413.0	1,205.9	1,335.0	2,482.0	43.0	648.4	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	102.5	579.3	76.4	150.7	382.0	1,057.1	1,251.6	2,339.5	45.9	545.6	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	99.1	540.2	71.1	141.7	355.5	941.0	1,162.1	2,162.6	55.6	549.0	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	113.2	617.8	84.8	167.7	424.0	1,172.2	1,450.7	2,559.5	42.8	601.9	(NA)	(NA)
1958 Census <sup>2</sup> ...	1,469	509	108.6	551.0	79.9	154.0	373.2	1,087.8	1,318.4	2,421.9	54.7	516.0	90	94

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued January 1970

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary****Rocco C. Siciliano, Under Secretary****Harold C. Passer, Assistant Secretary for Economic Affairs****BUREAU OF THE CENSUS George Hay Brown, Director**

Of the \$4,231.8 million total value of shipments and other receipts of establishments classified as farm machinery, \$238 million were products primary to other industries; and \$152 million were receipts for miscellaneous activities. The industry shipments of primary products represented 94 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 89 percent in 1963.

The total value of Farm Machinery and Equipment shipped by all producers in 1967 was \$4,056.1 million of which \$3,841 million, or 95 percent, were shipped by plants classified in industry 3522,

Farm Machinery, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was also 95 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

#### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3522, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-35A Farm Machinery and Equipment.

MA-35T Tractors except Garden Tractors.



TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967										1963		
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)						
INDUSTRY 3522.--FARM MACHINERY													
United States, total.....	1,615	659	134.2	931.3	102.4	199.8	650.6	2,016.0	2,280.8	4,231.8	127.2	112.6	1,328.4
New England.....	24	3	0.3	1.6	0.2	0.4	1.2	3.4	3.1	6.4	(D)	0.2	2.0
Massachusetts.....	7	1	0.1	0.7	0.1	0.2	0.5	1.3	0.9	2.1	(Z)	(D)	(D)
Middle Atlantic.....	80	30	5.3	40.8	3.2	7.3	22.3	92.9	70.0	159.8	(D)	5.1	70.2
New Jersey.....	12	5	0.3	1.8	0.2	0.5	1.2	4.2	3.6	7.4	0.1	0.2	1.8
East North Central....	406	219	62.4	455.6	47.4	92.6	323.8	1,008.6	1,241.2	2,221.7	66.9	52.9	645.9
Ohio.....	65	36	6.2	42.2	5.0	10.0	31.9	74.1	103.9	169.3	3.3	6.4	64.3
Indiana.....	70	36	6.2	40.9	4.6	9.1	27.5	89.3	97.1	180.7	5.5	5.2	49.0
Illinois.....	129	79	30.0	225.8	23.5	43.9	164.5	493.9	533.1	1,016.7	31.0	23.6	287.7
Michigan.....	53	22	5.3	38.7	3.8	7.2	25.3	86.7	216.8	304.0	7.2	5.2	104.1
Wisconsin.....	89	46	14.5	108.1	10.5	22.4	74.5	264.5	290.3	551.0	20.0	12.5	140.8
West North Central....	448	202	41.4	282.8	32.3	62.2	201.4	616.2	642.0	1,236.2	38.8	33.3	404.5
Minnesota.....	82	46	6.0	39.6	4.7	9.4	27.5	88.8	95.2	181.9	5.5	5.5	61.8
Iowa.....	138	66	24.2	179.4	18.8	35.2	129.6	387.0	372.4	744.1	25.1	21.6	286.5
Missouri.....	46	17	3.4	20.8	2.7	5.3	15.2	51.6	60.7	112.7	2.1	2.1	15.2
North Dakota.....	15	4	0.4	1.6	0.3	0.7	1.3	2.9	3.4	6.1	0.2	0.4	2.6
South Dakota.....	11	4	0.3	1.5	0.2	0.4	0.9	4.0	2.8	6.7	0.1	0.2	2.2
Nebraska.....	64	26	3.2	18.8	2.6	5.6	14.4	40.5	61.4	100.1	3.4	1.6	17.3
Kansas.....	92	39	3.9	21.1	2.9	5.5	12.4	41.3	46.0	84.6	2.5	2.0	18.9
South Atlantic.....	128	49	5.6	28.4	4.5	8.5	18.1	57.9	69.0	126.1	5.2	4.5	38.3
Virginia.....	9	8	0.6	2.7	0.5	0.9	2.0	5.3	4.8	10.2	0.8	0.5	5.4
North Carolina.....	27	12	2.0	9.1	1.6	2.6	5.2	12.3	21.2	34.9	1.3	1.3	8.7
Georgia.....	40	13	2.0	10.2	1.7	3.2	7.1	23.6	27.8	49.6	2.7	1.7	14.1
Florida.....	40	9	0.6	3.3	0.4	0.9	2.0	7.2	7.5	14.3	0.2	0.4	4.2
East South Central....	71	30	10.0	68.2	7.9	15.1	49.0	134.0	145.6	271.2	6.6	9.2	92.3
Alabama.....	20	7	1.2	6.0	1.0	2.1	4.0	17.4	17.8	32.5	(D)	0.9	9.0
West South Central....	139	49	3.5	17.8	2.7	5.4	11.0	30.9	38.1	68.2	2.0	2.6	22.9
Arkansas.....	22	10	0.5	2.3	0.4	0.7	1.5	4.0	4.4	8.4	0.1	0.3	2.6
Louisiana.....	14	6	0.8	4.6	0.6	1.1	2.4	5.2	11.6	16.9	0.7	0.5	4.0
Oklahoma.....	19	6	0.5	2.3	0.4	0.8	1.7	5.8	4.4	9.6	0.5	0.4	3.4
Texas.....	84	27	1.7	8.7	1.3	2.7	5.4	15.9	17.6	33.3	0.6	1.4	12.9
Mountain.....	85	24	1.5	9.2	1.2	2.4	6.1	18.5	19.1	36.9	1.0	1.1	10.3
Montana.....	8	1	0.1	0.5	0.1	0.1	0.4	0.9	1.0	1.9	0.1	(D)	(D)
Idaho.....	28	9	0.5	3.1	0.4	1.0	2.2	5.5	7.2	12.4	0.2	0.3	2.4
Colorado.....	28	9	0.7	4.4	0.5	1.0	2.7	8.6	8.2	16.6	0.5	0.4	4.8
Pacific.....	234	53	4.2	26.8	3.1	6.0	17.8	53.5	52.7	105.4	2.4	3.8	41.9
Washington.....	35	7	0.5	3.0	0.4	0.7	2.2	5.7	6.7	12.0	0.4	0.3	3.4
California.....	177	38	3.2	21.0	2.3	4.5	13.5	41.8	41.8	83.5	1.7	3.1	35.0

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	1967			1963		
		Production for all purposes (1,000 units)	Total shipments, including interplant transfers		Production for all purposes (1,000 units)	Total shipments, including interplant transfers	
			Quantity (1,000 units)	Value (million dollars)		Quantity (1,000 units)	Value (million dollars)
3522- --	FARM MACHINERY, TOTAL.....	(X)	(X)	4,056.1	(X)	(X)	2,542.1
35221 --	Wheel tractors and attachments (except contractors' off-highway type, garden tractors, and motor tillers):						
	As reported in the census of manufactures <sup>1</sup> .....	(X)	(X)	1,038.3	(X)	(X)	<sup>2</sup> 743.2
	As reported on Census annual Form MA-35T <sup>1</sup> .....	(X)	(X)	1,019.6	(X)	(X)	<sup>2</sup> 770.7
35222 --	Farm dairy machines, sprayers and dusters, farm elevators, farm blowers, garden tractors, and motor tillers:						
	As reported in the census of manufactures <sup>1</sup> .....	(X)	(X)	339.5	(X)	(X)	<sup>2</sup> 3405.9
	As reported on the Census annual Form MA-35A <sup>1</sup> .....	(X)	(X)	317.5	(X)	(X)	<sup>2</sup> 3404.1
35223 --	Planting, seeding, and fertilizing machinery:						
	As reported in the census of manufactures <sup>1</sup> .....	(X)	(X)	181.6	(X)	(X)	<sup>2</sup> 115.7
	As reported on the Census annual Form MA-35A <sup>1</sup> .....	(X)	(X)	151.4	(X)	(X)	<sup>2</sup> 111.9
35224 --	Plows, listers, harrows, rollers, pulverizers stalk cutters, and similar equipment:						
	As reported in the census of manufactures <sup>1</sup> .....	(X)	(X)	280.9	(X)	(X)	<sup>2</sup> 192.8
	As reported on the Census annual Form MA-35A <sup>1</sup> .....	(X)	(X)	257.7	(X)	(X)	<sup>2</sup> 191.6
35225 --	Harvesting machinery:						
	As reported in the census of manufactures <sup>1</sup> .....	(X)	(X)	580.7	(X)	(X)	<sup>2</sup> 395.3
	As reported on the Census annual Form MA-35A <sup>1</sup> .....	(X)	(X)	549.6	(X)	(X)	<sup>2</sup> 386.0
35226 --	Haying Machinery:						
	As reported in the census of manufactures <sup>1</sup> .....	(X)	(X)	148.8	(X)	(X)	<sup>2</sup> 133.8
	As reported on the Census annual Form MA-35A <sup>1</sup> .....	(X)	(X)	151.5	(X)	(X)	<sup>2</sup> 131.8
35227 --	Lawnmowers and snow blowers, total.....	(X)	(X)	374.2	(X)	(X)	268.7
35227 11	Hand (reel type) lawnmowers.....	(NA)	(NA)	7.7	458.9	497.2	7.4
	Power lawnmowers:						
	Reel type:						
35227 23	Nonriding.....	268.2	266.7	18.9	387.7	412.3	24.6
35227 25	Integral riding, with fixed or floating mower.....	(NA)	(NA)	6.6	7.3	6.6	3.1
	Rotary type:						
35227 41	Hand traction.....	2,930.9	2,877.4	135.3	2,465.6	2,396.4	98.6
	Power traction:						
35227 53	Nonriding.....	722.4	714.7	48.2	585.3	571.2	32.3
35227 55	Integral riding, with fixed or floating mower.....	359.3	366.2	73.2	259.5	262.2	40.4
35227 61	Snow blowers and snow throwers, single purpose residential only (excluding large commercial type units).....	235.9	241.7	34.1			
35227 81	Other, including gang-cutting units, sickle-bar mowers shipped as complete units, lawn edgers, and special cutting units.....	(X)	(X)	19.3	(X)	(X)	35.8
35227 91	Attachments for lawnmowers, snow blowers, and similar equipment.	(X)	(X)	19.3	(X)	(X)	21.9
35227 00	Lawnmowers and snow blowers, n.e.c.....	(X)	(X)	11.6	(X)	(X)	4.6
35228 --	All other farm machinery and equipment, total.....	(X)	(X)	404.5	(X)	(X)	( <sup>3</sup> )
	Products included in the census of manufactures:						
35228 10, 20, 30, 40, 50	As reported in the census of manufactures <sup>1</sup> .....	(X)	(X)	293.0	(X)	(X)	( <sup>3</sup> )
	As reported on the Census annual Form MA-35A <sup>1</sup> .....	(X)	(X)	303.7	(X)	(X)	( <sup>3</sup> )
35228 61	Windmill heads and windmill towers.....				(X)	(X)	2.3
35228 87	Hedge trimmers and shears, power.....	(X)	(X)	100.6	(X)	113.4	3.0
35228 98	Other farm machines, equipment and attachments.....				(X)	(X)	132.2
35228 00	All other farm machinery and equipment, n.s.k.....	(X)	(X)	10.9	(X)	(X)	13.0

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	1967			1963		
		Production for all purposes (1,000 units)	Total shipments, including interplant transfers		Production for all purposes (1,000 units)	Total shipments, including interplant transfers	
			Quantity (1,000 units)	Value (million dollars)		Quantity (1,000 units)	Value (million dollars)
3522 --	FARM MACHINERY, TOTAL--Continued						
35229 --	Parts for farm machinery and equipment, for sale separately, total.	(X)	(X)	554.3			
	Products included in the census of manufactures and on Form MA-35A:						
35229 41, 51, 61, 71, 98	As reported in the census of manufactures <sup>1</sup> .....	(X)	(X)	175.1			
	As reported on the Census annual Form MA-35A <sup>1</sup> .....	(X)	(X)	167.3			
35229 25	Replacement and repair parts for wheel tractors:				(X)	(X)	( <sup>2</sup> )
	As reported in the census of manufactures <sup>1</sup> .....	(X)	(X)	169.2			
	As reported on the Census annual Form MA-35T <sup>1</sup> .....	(X)	(X)	178.9			
35229 11	Parts sold to plants producing farm equipment (original equipment):						
35229 21	Parts for farm machinery (except wheel tractors).....	(X)	(X)	75.9			
	Parts for wheel tractors.....	(X)	(X)	99.2			
35229 31	Replacement and repair parts for lawnmowers and snow blowers....	(X)	(X)	25.2			
35229 00	Parts for farm machinery and equipment, for sale separately, n.s.k.....	(X)	(X)	9.7			
35220 00	Farm machinery, n.s.k. (For companies with 10 or more employees. See Note.).....	(X)	(X)	126.5	(X)	(X)	71.5
35220 02	Farm machinery, n.s.k. (For companies with less than 10 employees. See Note.).....	(X)	(X)	26.8			

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.e.c. Not elsewhere classified. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>For these products, data were also collected on Annual Form MA-35A, Farm Machines and Equipment, and MA-35T Tractors, Except Garden Tractors. In lieu of asking for detailed statistics on these products in the census of manufactures, respondents were asked to report only value of shipments for specified classes of products for which separate figures had previously been collected on the annual form. In most cases, the value figures reported in the census of manufactures for each class of products agreed closely with the corresponding figures reported in the annual survey. However, there were some differences between the census figures and the annual survey figures. These variations were due primarily to the following reason:

- Use of different reporting periods (calendar year vs. fiscal year.)
- Use of different basis for reporting value (company sales vs. factory production.)
- Use of estimates in reporting data on the annual survey, whereas census of manufactures figures generally represent more exact shipments figures.

See Current Industrial Reports Series MA-35A and MA-35T for detail product data.

<sup>2</sup>In 1963, parts were included with the individual product classes whereas in 1967 parts are included in a separate product class, 35339.

<sup>3</sup>1963 data for product class 35228 are included with product class 35222.



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3522.--FARM MACHINERY					
	Materials, parts, containers, and supplies, total.....		(X)	2,131.8	(X)	1,426.1
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	581.5	99.9	551.8	87.4
331012	Sheet and strip.....	..do.....	864.8	133.7	705.4	104.1
331013	Plates.....	..do.....	158.8	25.1	112.0	16.8
331015	Structural shapes.....	..do.....	106.2	17.1	81.1	12.2
331017	Wire and wire products.....	..do.....	31.8	8.0	23.2	4.8
331019	All other carbon steel mill shapes and forms.....	..do.....	149.6	35.2	137.0	28.3
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	..do.....	52.9	10.8	48.7	10.9
331029	All other alloy steel mill shapes and forms.....	..do.....	23.1	7.0	12.7	4.1
331031	Stainless steel mill shapes and forms.....	..do.....	6.1	6.7	2.8	4.2
	Copper and copper-base alloy:					
335102	Rod, bar and mechanical wire, including extruded and /or drawn shapes.....	Million lbs.....	2.2	1.5	2.6	1.0
335123	Plate, sheet and strip, including military cups and discs...	..do.....	(NA)	1.6	0.5	0.3
335127	Pipe and tube.....	..do.....	( <sup>2</sup> )	( <sup>2</sup> )	13.7	4.1
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate and foil.....	..do.....	7.1	2.7	6.9	3.0
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	..do.....	(NA)	2.9	(NA)	2.6
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	..do.....	(NA)	1.7	4.0	1.8
339915	Metal powders.....	..do.....	(D)	(D)	(NA)	(NA)
331051	Pig iron, excluding silvery iron.....	1,000 short tons.	112.3	7.0	134.3	7.8
999811	Iron and steel scrap.....	..do.....	335.0	13.0	320.8	13.4
	Castings (rough and semifinished): <sup>3</sup>					
332011	Iron (gray and malleable).....	..do.....	553.7	195.3	212.5	64.7
332300	Steel.....	..do.....	(NA)	15.9	11.7	7.3
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	15.7	9.2	9.8	5.7
339100	Iron and steel forgings <sup>3</sup> .....	1,000 short tons.	122.8	46.8	89.6	35.4
	Engines: <sup>3</sup>					
351920	Diesel and semidiesel.....	1,000.....	109.2	76.9	58.2	28.1
351901	Gasoline and other carburetor.....	..do.....	3,784.9	160.6	3,243.7	108.9
	Electric motors and generators: <sup>3</sup>					
362115	Fractional horsepower electric motors (under 1 hp.) (excluding timing motors).....	..do.....	(NA)	9.0	117.6	2.4
362120	Integral horsepower motors and generators (1 hp. and over)....	..do.....	128.7	9.0	68.0	4.5
	Bearings:					
356218	Ball.....	..do.....	(X)	35.6	(X)	22.1
356201	Roller.....	..do.....	(X)	19.7	(X)	16.3
301131	Pneumatic tires.....	1,000.....	3,749.1	73.9	2,511.8	47.8
301141	Inner tubes.....	..do.....	(NA)	19.6	4,125.0	9.0
970099	All other materials and components, parts, containers, and supplies consumed.....	..do.....	(X)	900.0	(X)	645.7
976000	Materials, parts, containers, and supplies, n.s.k. <sup>4</sup> .....	..do.....	(X)	186.4	(X)	121.3

(D) Included with material code 970099, "All other materials and components, etc.," to avoid disclosing figures for individual companies.

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>These figures are understated by \$20 million or less because of apparent undercoverage of carbon steel pipe and tube.<sup>2</sup>Included with material code 970099, "All other materials and components, etc."<sup>3</sup>In addition, the following quantities were produced and consumed into products at the same establishment: For 1967, Iron castings, 301.4 thousand short tons; Aluminum and aluminum-base alloy castings, 6.0 million pounds; and Gasoline and other carburetor engines, 25.7 thousand units. Comparable data for 1963 are: Iron castings, 301.3 thousand short tons; Aluminum and aluminum-base alloy castings, 2.4 million pounds; Iron and steel forgings, 5.1 thousand short tons; Gasoline and other carburetor engines, 75.7 thousand units; and Fractional horsepower electric motors, 2.0 thousand units.

No data are available for either 1967 or 1963 for the quantities of steel castings, diesel and semidiesel engines or integral horsepower motors and generators nor in 1967 for iron and steel forgings or fractional horsepower electric motors produced and consumed in the same establishments.

<sup>4</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3522, these small establishments accounted for approximately percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

**Textile mill products • Apparel and leather • Chemicals, rubber, and plastics • Machinery and equipment • Primary metals • Intermediate metal products • Processed foods • Lumber, furniture, and paper products • Stone, clay, and glass products.**

A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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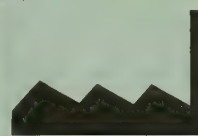
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OFFICIAL BUSINESS



# 1967 CENSUS OF MANUFACTURES



MC67(P)-35B-1

## INDUSTRY SERIES

### Construction machinery

SIC Code 3531

**preliminary  
report**

The Construction Machinery and Equipment Industry includes establishments primarily engaged in manufacturing heavy machinery and equipment used by the construction industries, such as bulldozers; concrete mixers; cranes, except industrial plant; dredging machinery; pavers; and power shovels. Establishments primarily engaged in manufacturing mining equipment are classified in industry 3532, and well drilling machinery in industry 3533.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Construction Machinery Industry amounted to \$4,188.8 million, an increase of 55 percent compared with 1963. Value added by manufacture at \$2,071.1 million in 1967 was 59 percent more than value added in 1963. Average employment in the industry showed an increase of 28 percent from 1963 to a total of 133.8 thousand employees in 1967.

Of the \$4,188.8 million total value of shipments and other receipts of establishments classified as construction machinery, \$518 million were products primary to other industries; and

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
INDUSTRY 3531.--CONSTRUCTION MACHINERY														
1967 Census....	646	358	133.8	995.4	99.2	195.0	677.7	2,071.1	2,140.3	4,188.8	187.3	1,049.3	87	93
1966 ASM <sup>1</sup> .....	(NA)	(NA)	121.2	899.0	92.1	192.8	632.4	1,880.7	1,968.1	3,767.8	129.8	929.3	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	121.5	850.0	90.8	186.0	590.7	1,745.0	1,849.3	3,545.6	105.1	854.8	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	116.3	790.1	86.6	177.7	544.1	1,590.1	1,666.5	3,200.1	74.1	780.6	(NA)	(NA)
1963 Census....	617	305	104.5	683.7	76.5	155.3	462.4	1,301.3	1,403.2	2,696.0	56.2	671.6	91	89
1962 ASM <sup>1</sup> .....	(NA)	(NA)	99.0	631.1	71.3	142.3	416.8	1,142.9	1,284.3	2,369.9	49.8	624.8	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	95.0	570.1	67.2	131.9	366.2	972.1	1,154.0	2,150.4	41.4	552.1	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	111.7	636.6	78.1	152.5	412.6	930.7	1,287.2	2,254.2	71.3	605.1	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	112.8	654.9	81.2	166.1	435.2	1,179.9	1,396.0	2,517.4	66.1	664.8	(NA)	(NA)
1958 Census <sup>2</sup> ...	579	295	95.3	496.8	66.5	124.6	310.3	1,022.8	1,033.6	2,107.4	45.4	577.3	88	90

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued December 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

Harold C. Passer, Assistant Secretary for Economic Affairs

**BUREAU OF THE CENSUS** George Hay Brown, Director

\$194 million were receipts for miscellaneous activities. The industry shipments of primary products represented 87 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 91 percent in 1963.

The total value of construction machinery shipped by all producers in 1967 was \$3,743.0 million of which \$3,477 million, or 93 percent, were shipped by plants classified in industry

3531, Construction Machinery, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 89 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3531, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MQ-35D, and MA-35D, Construction Machinery.  
M35S, Tractors, Except Garden Tractors.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
	INDUSTRY 3531.--CONSTRUCTION MACHINERY												
United States, total.....	646	358	133.8	995.4	99.2	195.0	677.7	2,071.1	2,140.3	4,188.8	187.3	104.5	1,301.3
New England.....	19	6	0.4	2.4	0.2	0.5	1.5	4.2	4.3	8.5	0.1	0.7	5.9
Massachusetts.....	11	5	0.2	1.7	0.2	0.3	1.0	2.8	2.9	5.7	(D)	0.3	1.8
Middle Atlantic.....	71	36	6.7	46.4	4.9	9.2	30.2	111.0	109.0	219.0	11.7	4.7	54.8
New York.....	27	13	1.6	11.1	1.2	2.2	7.2	26.7	30.7	55.8	(D)	1.2	12.0
New Jersey.....	17	4	0.4	3.0	0.3	0.6	1.7	5.2	5.4	10.9	(D)	0.9	8.4
Pennsylvania.....	27	19	4.6	32.3	3.4	6.4	21.3	79.1	72.9	152.3	(D)	2.6	34.4
East North Central....	209	142	91.7	695.1	69.3	135.7	488.0	1,428.3	1,454.0	2,881.5	122.2	76.0	967.4
Ohio.....	67	46	14.9	115.4	10.6	22.0	74.7	219.7	235.8	457.0	10.3	12.4	153.5
Indiana.....	20	14	4.3	31.2	3.1	6.3	20.6	57.5	59.4	112.9	5.8	3.7	45.2
Illinois.....	60	36	51.5	396.9	39.0	73.6	279.9	835.9	790.4	1,640.0	89.5	44.7	576.4
Michigan.....	27	17	10.3	71.8	8.2	15.8	53.0	152.5	199.9	341.8	10.2	4.5	51.6
Wisconsin.....	35	29	10.6	79.9	8.4	17.9	59.7	162.7	168.5	329.9	6.4	10.7	140.6
West North Central....	97	59	19.8	144.6	13.9	27.2	91.1	329.8	335.7	645.6	42.3	10.6	131.0
Minnesota.....	32	20	5.2	37.4	3.6	7.4	23.2	76.1	73.8	139.6	2.7	4.0	42.6
Iowa.....	23	15	10.6	80.2	7.6	14.3	51.6	202.5	183.6	378.8	36.0	4.7	72.3
Nebraska.....	6	4	0.3	1.7	0.2	0.5	1.3	3.4	3.1	6.5	(Z)	0.2	2.0
Kansas.....	18	10	0.8	5.0	0.6	1.1	2.9	9.8	11.5	21.1	0.2	0.5	3.1
South Atlantic.....	32	12	2.4	15.0	1.7	3.5	9.7	31.7	39.2	72.2	1.4	1.2	20.4
Florida.....	11	2	0.2	1.3	0.1	0.3	0.8	2.0	1.8	3.9	0.1	(D)	(D)
East South Central....	20	13	1.7	10.9	1.3	2.8	7.8	24.3	24.3	47.0	1.2	0.7	7.8
Alabama.....	9	6	0.7	4.6	0.6	1.1	3.3	10.8	7.1	17.5	0.4	(D)	(D)
West South Central....	69	41	5.4	35.6	3.9	8.3	21.7	70.1	84.2	155.4	4.2	4.0	37.5
Oklahoma.....	19	14	2.6	16.5	1.8	3.9	10.2	31.3	45.4	80.0	2.9	(D)	(D)
West.....	129	49	5.8	45.3	4.0	7.9	27.7	71.6	89.5	159.6	4.1	6.6	76.5
Colorado.....	6	4	0.1	1.1	0.1	0.2	0.6	2.2	1.9	4.2	0.1	(D)	(D)
Washington.....	16	7	1.6	12.8	1.3	2.6	9.6	20.3	18.2	39.0	(D)	1.1	11.8
California.....	80	29	3.2	25.1	2.0	3.9	13.6	38.7	53.9	91.4	2.8	4.0	54.7

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000 units)	Value (million dollars)	Quantity (1,000 units)	Value (million dollars)
3531- --	CONSTRUCTION MACHINERY, TOTAL.....	(X)	3,743.0	(X)	2,624.2
35311 --	Contractors' off-highway wheel tractors, except parts and attachments:				
	As reported in the census of manufactures <sup>1</sup> .....	(X)	<sup>2</sup> 132.3	(X)	102.7
	As reported on Census annual Form MA-35D <sup>1</sup> .....	(X)	<sup>2</sup> 118.2	(X)	101.0
35312 --	Tracklaying type tractors, except parts and attachments:				
	As reported in the census of manufactures <sup>1</sup> .....	(X)	395.2	(X)	317.4
	As reported on Census annual Form MA-35T <sup>1</sup> .....	(X)	377.8	(X)	314.1
35313 --	Parts and attachments for tracklaying tractors, contractors' off-highway wheel tractors, and tractor shovel loaders, total.....	(X)	599.0	(X)	<sup>3</sup> 395.6
	Parts (for replacement and repair) and attachments for tracklaying type:				
	Tractors, and tracklaying tractor shovel loaders:				
35313 10, 70	As reported in the census of manufactures <sup>1</sup> .....	(X)	340.4	(X)	<sup>2</sup> 291.6
	As reported on Census annual Form MA-35T <sup>1</sup> .....	(X)	352.5	(X)	(NA)
	Parts (for replacement and repair) and attachments for contractors' off-highway wheel tractors:				
35313 65	As reported on the census of manufactures <sup>1</sup> .....	(X)	53.1	(X)	37.6
	As reported on Census annual Form MA-35D <sup>1</sup> .....	(X)	50.6	(X)	(NA)
35313 21	Parts sold to other plants producing tracklaying tractors, contractors' off-highway type wheel tractors, and tractor shovel loaders.....			(X)	48.2
35313 67	Parts (for replacement and repair) and attachments for wheel type tractor shovel loaders.....	(X)	194.2	(X)	<sup>3</sup> 18.2
35313 00	Parts and attachments for tracklaying type tractors, contractors' off-highway wheel tractors, and tractor shovel loaders, n.s.k.....	(X)	11.2	(X)	-
35314 --	Power cranes (including locomotive and full-circle revolving with booms), draglines, shovels and parts, total.....	(X)	656.6	(X)	464.8
	Products included in the census of manufactures and also on Census Form MQ-35D, or MA-35D:				
35314 10, 20	As reported in the census of manufactures <sup>1</sup> .....	(X)	542.3	(X)	328.2
	As reported in the Census Form M35D or MA-35D <sup>1</sup> .....	(X)	533.8	(X)	308.5
35314 81	Front end attachments, buckets, grapples, slings, etc., for power cranes, draglines, and shovels (sold separately).....	(X)	18.2	(X)	15.1
35314 85	Parts for power cranes, draglines, and shovels.....	(X)	92.2	(X)	116.8
35314 00	Power cranes (including locomotive and full-circle revolving with booms), draglines, shovels, and parts, n.s.k.....	(X)	3.7	(X)	4.6
35316 --	Mixers, pavers, and related equipment, excluding parts, total.....	(X)	161.0	(X)	132.0
	Products included in the census of manufactures and also on Census Form MQ-35D or MA-35D:				
35316 20, 37, 40, and 50	As reported in the census of manufactures <sup>1</sup> .....	(X)	126.1	(X)	89.1
	As reported on Census Form M35D or MA-35D <sup>1</sup> .....	(X)	115.1	(X)	87.8
35316 12	Mixers, portable, under 3-1/2 cubic foot capacity (except plaster and mortar), hand or power operated.....	(NA)	0.8	23.6	1.3
35316 31	Mixers, plaster and mortar.....	7.9	3.6	10.2	4.7
35316 34	Pavers, finishers and spreaders.....	8.1	14.9	10.2	19.9
35316 39	Concrete vibrators (including screeds).....	24.7	5.4	22.3	4.6
35316 52	Other materials-aggregate spreaders and soil stabilization pavers.....	(NA)	3.8	5.3	7.8
35316 00	Mixers, pavers, and related equipment, excluding parts, n.s.k.....	(X)	6.4	(X)	4.6
35317 --	Tractor shovel loaders, excluding parts and attachments, total.....	(X)	411.5	(X)	<sup>2</sup> 295.3
	Tractor shovel loaders, wheel type excluding parts and attachments:				
35317 10	As reported in the census of manufactures <sup>1</sup> .....	(X)	277.0	(X)	152.1
	As reported on Census Form MQ-35D or MA-35D <sup>1</sup> .....	(X)	281.2	(X)	153.3
	Tractor shovel loaders, tracklaying type (20 net engine h.p. and over):				
35317 20	As reported in the census of manufactures <sup>1</sup> .....	(X)	134.5	(X)	<sup>2</sup> 143.2
	As reported on Census annual Form MA-35T <sup>1</sup> .....	(X)	125.8	(X)	140.2
35318 --	Scrapers, graders, rollers, and off-highway trucks, trailers, and wagons (excluding parts):				
	As reported in the census of manufactures <sup>1</sup> .....	(X)	<sup>2</sup> 694.6	(X)	480.0
	As reported on Census Form MQ-35D or MA-35D <sup>1</sup> .....	(X)	<sup>2</sup> 659.5	(X)	451.0

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000 units)	Value (million dollars)	Quantity (1,000 units)	Value (million dollars)
	CONSTRUCTION MACHINERY--Continued				
35319 --	Other construction machinery and equipment, including parts, total.....	(X)	615.2	(X)	403.5
	Products included in the census of manufactures and also on Census Form MQ-35D and MA-35D:				
35319 20, 30, 55, 70	As reported in the census of manufactures <sup>1</sup> .....	(X)	98.2	(X)	80.4
	As reported on Census Form M35D or MA-35D <sup>1</sup> .....	(X)	(NA)	(X)	76.4
35319 05	Four-wheel drive, skid steer, loaders.....	(X)	( <sup>4</sup> )	(X)	( <sup>5</sup> )
35319 11	Dredging machinery, hydraulic and other types.....	(X)	19.7	(X)	14.2
35319 21	Railway maintenance of way equipment (rail layers, ballast spreaders, etc.) except rail cars.....	(X)	26.9	(X)	22.5
35319 23	Horizontal and vertical earth augers and power post hole diggers (excluding water well and blast hole drills).....	(X)	8.2	(X)	( <sup>5</sup> )
35319 52	Winches, except winches for mounting on wheel or tracklaying tractors...	(NA)	41.0	36.5	22.5
35319 61	Derricks, except oil and gas well (including gallowes, frames, ginpole, stiff legs and guy).....	1.0	3.3	0.9	3.8
35319 71	Handheld compaction equipment (including tampers, upright and vibratory compactors, etc.).....	6.8	5.9	(X)	( <sup>5</sup> )
35319 81	Snow plows (for mounting of tractors or trucks), rotary blowers, "v" and single blades and wings (attachments only).....	(NA)	19.8	(NA)	25.1
35319 83	Other excavation and road construction machinery, drawn ditchers and trenchers, contractors' handheld air tools (other than compaction equipment), drawn rollers, as well as other types of excavating and earthmoving equipment not specified above.....	(X)	28.8	(X)	<sup>5</sup> 41.4
35319 85	Parts and attachments for construction machinery and equipment (sold separately) (except parts and attachments for power cranes, draglines, shovels, and tractors).....	(X)	282.2	(X)	144.1
35319 98	All other construction machinery and equipment (complete units).....	(X)	55.8	(X)	45.0
35319 00	Other construction machinery and equipment, including parts, n.s.k.....	(X)	25.4	(X)	4.5
35310 00	Construction machinery and equipment, n.s.k. (For companies with 10 or more employees. See Note.).....	(X)	71.0	(X)	33.2
35310 02	Construction machinery and equipment, n.s.k. (For companies with less than 10 employees. See Note.).....	(X)	6.9		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>For these products, data were also collected in the census commodity survey program. In lieu of asking for detailed statistics on the products in the census of manufactures, respondents were asked to report only value of shipments for specified classes of products for which separate figures had previously been collected in the commodity survey. In most cases, the value figures reported in the census of manufactures for each class of products agreed closely with the corresponding figures reported in the commodity survey. However, there were some differences between the census figures and the commodity survey figures. These variations were due primarily to the following reasons:

- Use of different reporting periods (calendar year vs. fiscal year.)
- Use of different bases for reporting value (company sales vs. factory production.)
- Use of estimates in reporting data on the annual survey, whereas census of manufactures figures generally represent more exact shipments figures.

See Current Industrial Reports Series MA-35D, MQ-35D, or M35S for detail product data.

<sup>2</sup>For 1963 data on contractors' off-highway type wheel tractors included units shipped as integral part of various types of scrapers. For 1967, these prime movers are included in the total value of the scrapers which they power.

<sup>3</sup>Parts and attachments for wheel and tracklaying tractor shovel loaders are included in product class 35313 beginning in 1965. In prior years they were included in product class 35317. The 1963 figures have been revised accordingly.

<sup>4</sup>Data for product code 35319 05, four wheel drive, skid steer, loaders are included in product code 35319 83 to avoid disclosing figures for individual companies.

<sup>5</sup>In 1963 codes 35319 05, 23, and 71 were included in product code 35319 83, other excavating and road construction machinery.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3531.--CONSTRUCTION MACHINERY					
	Materials, parts, containers, and supplies, total.....		(X)	1,970.1	(X)	1,284.3
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bar and bar shapes.....	1,000 short tons.	412.3	70.6	271.9	43.9
331012	Sheet and strip.....	..do.....	151.8	24.1	104.0	16.1
331013	Plates.....	..do.....	598.3	94.3	506.2	74.1
331015	Structural shapes.....	..do.....	109.8	17.8	115.4	18.0
331017	Wire and wire products.....	..do.....	8.7	3.7	5.3	2.9
331019	All other carbon steel mill shapes and forms.....	..do.....	195.2	23.5	94.7	21.3
	Alloy steel except stainless:					
331021	Bars and bar shapes.....	..do.....	64.7	15.6	48.6	11.8
331029	All other alloy steel mill shapes and forms.....	..do.....	68.0	18.6	55.1	13.4
331031	Stainless steel.....	..do.....	0.8	1.1	0.4	0.6
	Copper and copper-base alloy:					
335790	Insulated wire and cable.....	Million lbs. (copper content)	0.9	0.9	1.3	1.2
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	(NA)	0.8	0.5	0.3
335123	Plate, sheet and strip (including military cups and discs)..	..do.....	(NA)	0.5	8.4	4.3
335127	Pipe and tube.....	..do.....	(2)	(2)	3.2	1.6
	Aluminum and aluminum-base alloy:					
335202	Sheet plate and foil.....	..do.....	1.6	0.8	2.5	1.2
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	..do.....	1.0	0.7	1.6	0.8
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.....	..do.....	1.4	1.5	0.2	0.1
331051	Pig iron (excluding silvery iron).....	1,000 short tons.	43.5	2.5	34.7	2.1
999811	Iron and steel scrap (purchased scrap only).....	..do.....	97.7	3.2	65.0	2.1
	Castings (rough and semifinished): <sup>3</sup>					
332011	Iron (gray and malleable).....	..do.....	247.9	103.8	154.8	54.2
332300	Steel.....	..do.....	181.5	126.5	160.4	95.0
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	13.3	12.2	10.1	7.9
336200	Copper and copper-base alloy.....	..do.....	3.6	3.4	5.3	4.3
339100	Iron and steel forgings <sup>3</sup> .....	1,000 short tons.	313.8	146.2	230.3	97.5
	Engines: <sup>3</sup>					
351920	Diesel and semidiesel.....	Thousands.....	34.9	80.9	42.1	87.6
351901	Gasoline and other carburetor.....	..do.....	28.6	16.0	43.2	14.6
362120	Integral horsepower motors and generators (1 hp. and over) <sup>3</sup> .....	..do.....	(NA)	22.5	26.5	16.9
	Bearings:					
356218	Ball.....	..do.....	(X)	18.9	(X)	9.8
356201	Roller.....	..do.....	(X)	36.7	(X)	15.2
301131	Pneumatic tires.....	Thousands.....	465.9	63.2	367.0	40.9
356601	Mechanical power transmission equipment, (except motor vehicle), including gears, clutches, etc.....	..do.....	(X)	61.2	(X)	72.2
970099	All other materials and components, parts, containers, and supplies consumed.....	..do.....	(X)	807.8	(X)	492.3
976000	Materials, parts, containers, and supplies, n.s.k. <sup>4</sup> .....	..do.....	(X)	190.6	(X)	60.3

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>The figures are understated by \$10 million or less because of apparent undercoverage of carbon steel pipe and tube.<sup>2</sup>Included with material code 970099, "All other materials and components, etc."<sup>3</sup>Iron and steel forgings, code 339100 produced and consumed in the same establishment amounted to 36.0 thousand short tons in 1967 compared to 34.0 for 1963. Gasoline and other carburetor engines, code 351901 produced and consumed in the same establishment amounted to 9.3 thousand units for 1967 compared to 9.4 for 1963. In addition, integral horsepower electric motors and generators produced and consumed in the same establishment for 1963 amounted to 9.1 thousand units; the comparable figure for 1967 is not available. No data are available for either 1963 or 1967 on the quantities of castings, or diesel and semidiesel engines produced and consumed in the same establishment.<sup>4</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3531, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.

# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



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BUREAU OF THE CENSUS  
WASHINGTON, D.C. 20233**

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**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

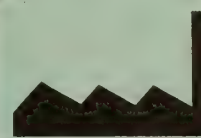
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-35B-2

## INDUSTRY SERIES

**preliminary  
report**

### Mining machinery

SIC Code 3532

The Mining Machinery and Equipment, Except Oil Field Machinery and Equipment, Industry includes establishments primarily engaged in manufacturing heavy machinery and equipment used by the mining industries, such as coal breakers, mine cars, mineral cleaning machinery, concentration machinery, core drills, coal cutters, portable rock drills, and rock crushing machinery. Establishments primarily engaged in manufacturing construction machinery are classified in industry 3531; well drilling machinery in industry 3533; and coal and ore conveyors in industry 3535.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Mining Machinery Industry amounted to \$622.0 million, an increase of 49 percent compared with 1963. Value added by manufacture at \$306.0 million in 1967 was 42 percent more than value added in 1963. Average employment in the industry showed an increase of 28 percent from 1963 to a total of 21.7 thousand employees in 1967.

Of the \$622.0 million total value of shipments and other receipts of establishments classified as mining machinery, \$120 million were products primary to other industries; and \$73 million were receipts for miscellaneous activities. The industry shipments of primary products represented 78 percent of the total manufactured

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3532.--MINING MACHINERY														
1967 Census....	211	110	21.7	156.3	14.9	29.6	95.4	306.0	313.4	622.0	18.9	171.5	78	83
1966 ASM <sup>1</sup> .....	(NA)	(NA)	21.6	155.1	15.2	31.4	99.2	306.3	343.5	630.4	19.4	166.0	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	20.3	138.1	14.0	28.3	87.6	269.2	286.4	545.1	9.6	140.3	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	18.7	123.6	13.0	25.9	76.3	241.2	239.1	475.7	7.8	123.7	(NA)	(NA)
1963 Census....	204	93	16.9	109.5	11.8	23.3	67.7	215.4	203.8	417.6	6.8	109.4	75	82
1962 ASM <sup>1</sup> .....	(NA)	(NA)	19.1	120.8	11.9	24.0	67.0	205.7	194.8	402.4	6.5	102.6	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	19.8	122.0	12.3	25.1	65.8	220.3	202.6	427.5	7.4	109.9	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	19.6	115.5	12.8	25.3	65.9	209.7	193.8	406.9	*6.3	103.3	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	18.1	104.3	12.0	23.7	61.3	204.6	189.7	399.5	6.0	104.1	(NA)	(NA)
1958 Census <sup>2</sup> ...	173	90	17.8	97.0	11.7	22.6	56.4	165.8	167.1	342.0	6.5	106.0	72	77

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 2 and 2, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

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**BUREAU OF THE CENSUS George Hay Brown, Director**

product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 75 percent in 1963.

The total value of mining machinery shipped by all producers in 1967 was \$520.4 million of which \$429 million, or 83 percent, were shipped by plants classified in industry 3532, Mining Machinery, while the remainder was shipped by plants classified in other industries. This percent,

called the coverage ratio, was 82 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

#### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3532, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-35F, Mining Machinery.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3532.--MINING MACHINERY													
United States, total.....	211	110	21.7	156.3	14.9	29.6	95.4	306.0	313.4	622.0	18.9	16.9	215.4
Northeast.....	47	28	6.1	45.6	3.8	7.7	25.8	91.4	99.0	191.1	6.3	5.0	53.4
Pennsylvania.....	30	17	3.6	28.2	2.2	4.5	15.8	63.7	66.3	131.4	1.6	3.1	32.4
East North Central....	49	33	8.2	59.5	5.5	10.8	35.2	106.5	116.2	228.8	7.3	7.0	94.0
Ohio.....	18	13	2.3	16.0	1.7	3.5	10.7	32.7	32.6	65.6	2.3	2.0	26.8
Indiana.....	4	3	0.2	1.1	0.2	0.3	0.8	2.1	1.3	3.4	(Z)	(D)	(D)
Michigan.....	7	2	0.3	1.6	0.2	0.4	1.2	3.2	3.3	6.4	0.2	(D)	(D)
West North Central....	18	11	1.6	11.3	1.1	2.2	7.1	21.7	24.6	44.7	1.1	1.1	14.6
Missouri.....	7	4	0.3	2.3	0.2	0.4	1.2	3.2	5.4	8.6	(D)	0.2	3.7
South.....	56	22	2.6	17.0	2.0	4.1	11.1	36.9	37.5	72.8	1.6	1.7	18.4
South Atlantic.....	38	15	1.9	12.6	1.4	2.9	8.0	28.3	21.8	54.3	1.2	1.4	14.3
Virginia.....	13	4	0.4	2.2	0.3	0.6	1.3	6.1	8.1	13.9	0.1	(D)	(D)
West.....	41	16	3.2	22.9	2.4	4.8	16.3	49.5	36.2	84.7	2.5	2.1	35.1
California.....	17	6	0.4	3.4	0.3	0.5	1.9	8.2	7.4	16.1	(D)	0.2	5.0

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000 of units)	Value (\$1,000)	Quantity (1,000 of units)	Value (\$1,000)
3532- --	MINING MACHINERY AND EQUIPMENT, TOTAL.....	(X)	520.4	(X)	336.2
35321 --	Underground mining machinery and related mining equipment:				
	As reported in the census of manufactures <sup>1</sup> .....	(X)	100.9	(X)	73.6
	As reported on Census Form MA-35F <sup>1</sup> .....	(X)	92.0	(X)	71.5
35322 --	Crushing, Pulverizing, and screening machinery (stationary):				
	As reported in the census of manufactures <sup>1</sup> .....	(X)	78.4	(X)	58.0
	As reported on Census Form MA-35F <sup>1</sup> .....	(X)	72.3	(X)	54.6
35323 --	All other mining machinery and equipment:				
	As reported in the census of manufactures <sup>1</sup> .....	(X)	50.3	(X)	39.3
	As reported on Census Form MA-35F <sup>1</sup> .....	(X)	46.2	(X)	38.4
35324 --	Parts and attachments for mining machinery and equipment, total.....	(X)	255.9	(X)	158.0
35324 25	Construction rock drills, portable, handheld, or mounted.....	10.6	21.8	4.8	4.9
	Percussion rock drill bits:				
35324 31	Containing tungsten carbide.....	(X)	20.9	(X)	13.0
35324 35	Made entirely of steel.....			(X)	2.4
35324 41	Other drills, tools, and supplies for drills (sold separately).....	(NA)	38.8	(X)	16.2
35324 75	Other parts and attachments for mining machinery and equipment (sold separately) (excluding drills).....	(X)	167.0	(X)	121.1
35324 00	Parts and attachments for mining machinery and equipment, n.s.k.....	(X)	7.4	(X)	0.6
35320 00	Mining machinery and equipment, n.s.k. (For companies with ten or more employees. See Note.).....	(X)	32.5		
35320 02	Mining machinery and equipment, n.s.k. (For companies with less than ten employees. See Note.).....	(X)	2.4	(X)	7.3

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>For these products, data were also collected on Annual Form MA-35F, "Mining Machinery." In lieu of asking for detailed statistics on these products in the census of manufactures, respondents were asked to report only value of shipments for specified classes of products for which separate figures had previously been collected on the annual form. In most cases, the value figures reported in the census of manufactures for each class of products agreed closely with the corresponding figures reported in the annual survey. However, there were some differences between the census figures and the annual survey figures. These variations were due primarily to the following reasons:

- Use of different reporting periods (calendar year vs. fiscal year.)
- Use of different bases for reporting value (company sales vs. factory production.)
- Use of estimates in reporting data on the annual survey, whereas census of manufactures figures generally represent more exact shipments figures.

See Current Industrial Reports Series MA-35F, "Mining Machinery" for detailed product information.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3532.--MINING MACHINERY AND EQUIPMENT					
	Materials, parts, containers and supplies, total.....		(X)	242.2	(X)	166.5
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bar and bar shapes.....	1,000 short tons.	54.3	10.9	21.9	4.5
331012	Sheet and strip.....	..do.	12.0	1.7	5.7	1.0
331013	Plates.....	..do.	94.7	13.6	46.2	6.8
331015	Structural shapes.....	..do.	25.0	4.1	15.5	2.4
331017	Wire and wire products.....	..do.	7.4	2.5	0.3	0.1
331019	All other carbon steel mill shapes and forms.....	..do.			8.4	1.2
	Alloy steel except stainless:					
331021	Bars and bar shapes.....	..do.	33.7	11.0	8.7	2.5
331029	All other alloy steel mill shapes and forms.....	..do.			8.2	1.9
331031	Stainless steel.....	..do.	1.1	1.5	0.7	1.0
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction).....	Million pounds...	(D)	(D)	0.5	0.6
335790	Insulated wire and cable.....	Million pounds (copper content)	(D)	(D)		
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million pounds...	1.1	0.6	0.4	0.3
335123	Plate, sheet and strip (including military cups and discs)..	..do.			0.1	0.1
335127	Piae and tube.....	..do.			0.1	0.1
	Aluminum and aluminum-base alloy:					
335202	Sheet plate and foil.....	..do.	0.3	0.2	0.1	0.1
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	..do.				
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.....)	..do.			(NA)	0.2
331051	Pig iron (excluding silvery iron).....	1,000 short tons.	3.5	0.2	5.5	0.3
999811	Iron and steel scrap (purchased scrap only).....	..do.	14.2	0.6	14.5	0.5
	Castings (rough and semifinished): <sup>2</sup>					
332011	Iron (gray and malleable).....	..do.	14.4	7.7	10.7	4.3
332300	Steel.....	..do.	47.6	34.4	24.5	14.8
336100	Aluminum and aluminum-base alloy.....	Million pounds...	0.2	0.3	0.1	0.2
336200	Copper and copper-base alloy <sup>1</sup> .....	..do.	1.2	1.2	0.6	0.7
339100	Iron and steel forgings <sup>2</sup> .....	1,000 short tons.	12.3	9.0	17.9	8.1
	Engines: <sup>2</sup>					
351920	Diesel and semidiesel.....	1,000.....	0.5	1.1	0.5	1.5
351901	Gasoline and other carburetor <sup>1</sup> .....	..do.	(D)	(D)	0.6	0.3
362120	Integral horsepower motors and generators (lhp. and over) <sup>2</sup> .....	..do.	8.6	6.0	9.9	8.8
	Bearings:					
356218	Ball.....	.....	(X)	1.4	(X)	1.2
356201	Roller.....	.....	(X)	3.6	(X)	1.6
301131	Pneumatic tires.....	1,000.....	(D)	(D)	9.6	1.0
356601	Mechanical power transmission equipment, (except motor vehicle), including gears, clutches, etc.....	.....	(X)	11.2	(X)	4.5
970099	All other materials and components, parts, containers, and supplies consumed.....	.....	(X)	87.8	(X)	83.9
976000	Materials, parts, containers and supplies, n.s.k. <sup>3</sup> .....	.....	(X)	29.6	(X)	11.6

(D) Included with material code 970099, "All other materials and components, parts, containers and supplies consumed" in order to avoid disclosing figures for individual companies.

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Included with material code 970099, "All other materials and components, etc."

<sup>2</sup>In addition the following quantities were produced and incorporated into finished products at the same establishment during 1963: code 332011, iron castings, 12.2 thousand short tons; code 332300, steel castings, 1.3 thousand short tons; and code 336200, copper castings, 1.7 million pounds. Similar data are not available for 1967. No data are available for either 1963 or 1967 on the quantities of aluminum castings, iron and steel forgings, or integral horsepower electric motors and generators produced and consumed in the same establishment.

<sup>3</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3532, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**U.S. DEPARTMENT OF COMMERCE**

**BUREAU OF THE CENSUS**

**WASHINGTON, D.C. 20233**

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**OFFICIAL BUSINESS**

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES

MC67(P)-35B-3

## INDUSTRY SERIES

**preliminary  
report**

### Oilfield machinery

SIC Code 3533

The Oil Field Machinery and Equipment Industry includes establishments primarily engaged in manufacturing machinery and equipment for use in oil and gas fields, or for drilling water wells.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Oil Field Machinery Industry amounted to \$775.4 million, an increase of 16 percent compared with 1963. Value added by manufacture at \$489 million in 1967 was 23 percent more than value added in 1963. Average employment in the industry showed an increase of 8 percent

from 1963 to a total of 32 thousand employees in 1967.

Of the \$775.4 million total value of shipments and other receipts of establishments classified as oil field machinery, \$89 million were products primary to other industries; and \$87 million were receipts for miscellaneous activities. The industry shipments of primary products represented 87 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 90 percent in 1963.

The total value of oil field machinery shipped by all producers in 1967 was \$660.1 million of which \$599 million, or 91 percent, were shipped

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3533. --OILFIELD MACHINERY														
1967 Census....	356	170	31.6	232.4	21.0	44.2	138.2	489.3	292.6	775.4	23.1	247.9	87	91
1966 ASM <sup>1</sup> .....	(NA)	(NA)	36.0	248.3	24.7	53.2	152.4	513.7	338.6	846.0	28.4	243.5	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	34.9	234.2	24.4	52.9	146.2	506.6	328.7	816.2	24.6	239.3	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	30.7	203.7	21.0	45.1	125.1	463.6	298.9	733.8	25.2	206.7	(NA)	(NA)
1963 Census....	408	176	29.2	184.3	20.1	41.4	113.5	398.2	264.3	666.5	11.3	176.8	90	91
1962 ASM <sup>1</sup> .....	(NA)	(NA)	28.5	179.3	18.6	41.0	106.4	381.7	242.2	625.3	*17.6	172.3	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	27.2	169.2	17.7	38.5	98.0	352.6	224.2	587.4	*12.8	167.8	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	31.2	187.4	20.1	43.1	108.3	370.0	249.1	615.1	16.1	182.0	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	33.0	194.5	21.9	45.9	114.3	400.1	271.7	654.1	20.2	195.0	(NA)	(NA)
1958 Census <sup>2</sup> ...	389	168	31.9	174.7	20.7	41.2	101.9	336.8	241.9	585.3	18.3	174.0	92	94

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

**BUREAU OF THE CENSUS** George Hay Brown, Director



by plants classified in industry 3533, Oil Field Machinery, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was also 91 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1,

2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total	With 20 employees or more (number)	Number	Payroll (million dollars)	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
INDUSTRY 3533.—OILFIELD MACHINERY													
United States, total.....	356	170	31.6	232.4	21.0	44.2	138.2	489.3	292.6	775.4	23.1	29.2	398.2
Northeast.....	15	12	1.8	13.6	1.1	2.2	6.9	25.3	15.5	40.5	2.3	0.9	12.2
New Jersey.....	5	4	0.3	2.0	0.2	0.3	1.1	4.1	2.7	6.9	0.3	(D)	(D)
Pennsylvania.....	7	6	1.4	10.9	0.9	1.7	5.4	20.3	11.2	31.2	(D)	0.7	9.9
North Central.....	21	8	1.0	6.9	0.7	1.3	3.9	14.4	7.2	22.2	0.5	1.3	14.7
Ohio.....	7	3	0.4	2.5	0.3	0.6	1.8	4.0	2.7	6.7	(D)	0.5	4.5
South.....	254	118	25.0	180.7	16.6	35.3	108.5	366.6	236.1	598.2	16.9	23.2	306.7
West South Central..	247	116	24.5	177.4	16.2	34.2	105.4	364.8	231.2	593.1	(D)	(D)	(D)
Oklahoma.....	50	18	3.7	25.6	2.7	5.5	16.6	48.0	42.7	93.3	1.9	4.2	51.4
Texas.....	180	91	19.7	144.6	12.6	26.9	83.6	304.8	181.2	480.5	13.4	17.7	244.2
West.....	66	32	3.9	31.3	2.6	5.4	18.9	82.9	33.7	114.4	3.3	3.7	64.5

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (number of units)	Value (million dollars)	Quantity (number of units)	Value (million dollars)
3533- --	OILFIELD MACHINERY, TOTAL.....	(X)	660.1	(X)	572.7
35331 --	Rotary oilfield and gasfield drilling machinery and equipment, total.....	(X)	243.5	(X)	217.2
	Rotary drilling surface equipment:				
35331 11	Blocks, crown and traveling.....	253	1.3	355	1.8
35331 12	Draw works and accessories.....	83	9.0	92	8.4
35331 14	Rotary tables.....	156	1.5	145	1.0
35331 15	Elevators, spiders, slips, hooks, links, and connectors.....	(X)	5.3	(X)	6.9
35331 16	Swivels and accessories.....	(X)	3.9	(X)	1.6
35331 17	Well control equipment (blow-out preventers, etc.).....	(X)	19.4	(X)	10.6
35331 19	Other rotary drilling surface machinery and equipment.....	(X)	21.1	(X)	23.5
	Rotary drilling subsurface equipment:				
35331 41	Bits (quantity in thousands).....	588	111.0	652	110.6
35331 42	Reamers.....	(X)	3.8	(X)	6.0
35331 43	Coring equipment.....	(X)	2.2	(X)	1.2
35331 44	Tool joints, subs, and connectors.....	(X)	19.8	(X)	17.9
35331 45	Drill collars (quantity in thousands).....	17	10.9	12	8.1
35331 47	Fishing and cutting tools.....	(X)	8.3	(X)	6.4
35331 49	Other subsurface rotary driving equipment, including Kelly joints.....	(X)	13.0	(X)	12.3
35331 00	Rotary oilfield and gasfield drilling machinery and equipment, n.s.k....	(X)	13.0	(X)	1.2
35332 --	Other oilfield and gasfield drilling machinery and equipment, total.....	(X)	43.5	(X)	38.8
35332 31	Cable tool drilling machinery and equipment (including both surface and subsurface equipment).....	(X)	5.7	(X)	2.8
	Cementing, floating, guiding, and shoe equipment:				
35332 51	Guide shoes, float collars, and combination guide and float shoes.....	(X)	8.4	(X)	6.8
35332 55	Other cementing equipment.....	(X)	9.9	(X)	7.0
35332 61	Parts for oil and gasfield drilling equipment sold separately (except parts for portable drilling rigs).....	(X)	13.7	(X)	18.2
35332 98	Other oilfield and gasfield drilling equipment, except portable.....	(X)	5.8	(X)	4.0
35333 --	Oilfield and gasfield production machinery and equipment (except pumps), total.....	(X)	258.4	(X)	261.4
	Flowing well equipment, surface and subsurface:				
35333 11	Christmas tree assemblies.....	(X)	28.4	(X)	15.0
35333 13	Casing and tubing heads and supports.....	(X)	10.7	(X)	11.7
35333 15	Chokes, manifolds, and other accessories.....	(X)	15.4	(X)	16.8
35333 19	Rodless oil lifting machinery and equipment (other than pumps).....	(X)	23.8	(X)	7.6
	Rod lifting machinery and equipment, surface, including pumps when they are components of a complete assembly:				
35333 53	Pumping units and accessories, including back crank equipment.....	6,089	28.8	9,138	41.4
35333 55	Other surface rod lifting machinery and equipment.....	(X)	1.6	(X)	2.0
35333 57	Rod lifting equipment, subsurface, except pumps (quantity represents thousands of sucker rods shipped).....	1,577	20.7	2,594	24.6
	Other production machinery and equipment:				
35333 61	Packers.....	(X)	38.7	(X)	17.3
35333 65	Screens, tubing, catchers, etc.....	(X)	11.0	(X)	8.5
35333 71	Oil and gas separating, metering, and treating equipment (quantity represents thousands of separators).....	21	16.1	16	13.9
35333 81	Parts for oilfield and gasfield machinery and tools, sold separately, including parts for portable drilling rigs but excluding parts for other drilling equipment.....	(X)	11.2	(X)	19.5
35333 98	Other oilfield and gasfield machinery and tools.....	(X)	38.8	(X)	78.5
35333 00	Oilfield and gasfield production machinery and equipment (except pumps), n.s.k.....	(X)	12.9	(X)	4.6
35334 --	Other oilfield and gasfield machinery and tools (except pumps) including water well, total.....	(X)	65.5	(X)	43.3
	Portable drilling rigs, permanently mounted on truck or trailer:				
	Oilfield and gasfield:				
35334 11	Cable tool.....	(1)	(1)	122	3.5
35334 13	Rotary rigs.....	165	9.2	298	14.6
	Water well and blast hole:				
35334 15	Cable tool.....	1274	16.5	397	2.9
35334 17	Rotary rigs.....	100	4.8	209	6.7
35334 21	Derricks, oilfield and gasfield, substructures, and accessories--regular and portable, including equipment shipped "knocked down" and assembled on the site).....	(NA)	25.3	(NA)	8.1
35334 31	Well surveying machinery and equipment.....	(X)	13.1	(X)	7.1
35334 00	Other oilfield and gasfield machinery and tools, n.s.k.....	(X)	6.6	(X)	(Z)

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963--Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (number of units)	Value (million dollars)	Quantity (number of units)	Value (million dollars)
3533- --	OILFIELD MACHINERY--Continued				
35330 00	Oilfield machinery and equipment, n.s.k. (For companies with 10 or more employees. See Note.).....	(X)	46.2	(X)	11.9
35330 02	Oilfield machinery and equipment, n.s.k. (For companies with less than 10 employees. See Note.).....	(X)	3.0		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>1967 data for oil and gasfield cable tools, code 35334 11, have been included with product code 35334 15, water well and blast hole cable tools in order to avoid disclosing figures of individual companies.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3533.--OILFIELD MACHINERY					
	Materials, parts, containers, and supplies, total.....		(X)	252.2	(X)	216.4
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	63.2	11.7	50.0	9.2
331013	Plates.....	..do.....	51.9	8.3	44.8	6.8
331015	Structural shapes.....	..do.....	26.5	4.4	32.1	5.1
331019	All other carbon steel mill shapes and forms.....	..do.....	21.5	6.3	27.5	7.1
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	..do.....	93.4	24.9	75.0	19.5
331029	All other alloy steel mill shapes and forms.....	..do.....	20.4	6.2	26.2	7.3
331031	Stainless steel mill shapes and forms.....	..do.....	2.9	4.0	1.8	2.6
335121	Copper and copper-base alloy.....	Million lbs.....	1.6	1.3	2.4	1.5
335208	Aluminum and aluminum-base alloy.....	..do.....	1.3	1.1	0.9	0.7
	Castings (rough and semifinished): <sup>1</sup>					
332011	Iron (gray and malleable).....	1,000 short tons.	13.9	5.5	46.0	12.8
332300	Steel.....	..do.....	36.3	19.4	17.0	11.5
336200	Copper and copper-base alloy.....	Million lbs.....	1.2	1.4	2.0	1.4
339100	Iron and steel forgings <sup>1</sup> .....	1,000 short tons.	23.5	12.0	17.1	7.8
351920	Engines, diesel and semidiesel <sup>1</sup> .....	1,000.....	0.8	4.9	0.8	3.3
	Bearings:					
356218	Ball.....		(X)	2.6	(X)	1.7
356201	Roller.....		(X)	2.4	(X)	2.7
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	95.8	(X)	91.1
976000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> .....		(X)	40.0	(X)	24.3

(X) Not applicable.

<sup>1</sup>No data are available for castings, iron and steel forgings or diesel and semidiesel engines produced and consumed in the same plant except for 1963 as follows: iron castings, (3.9 thousand short tons); and steel castings, (1.6 thousand short tons).

<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3533, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products**--In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture**--This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment**--For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories**--Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

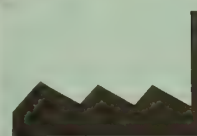
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POSTAGE AND FEES PAID  
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OFFICIAL BUSINESS



# 1967 CENSUS OF MANUFACTURES



MC67(P)-35B-4

## INDUSTRY SERIES

**preliminary  
report**

### Elevators and moving stairways

SIC Code 3534

The Elevators and Moving Stairway Industry includes establishments primarily engaged in manufacturing passenger or freight elevators, automobile lifts, dumb waiters, and moving stairways. Establishments primarily engaged in manufacturing commercial conveyors systems and equipment are classified in industry 3535, and farm elevators in industry 3522.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classi-

fied in the Elevators and Moving Stairways Industry amounted to \$316.5 million. Value added by manufacture totaled \$193.9 million in 1967. Average employment in the industry showed an increase of 11 percent from 1963 to a total of 13.8 thousand employees in 1967.

Of the \$316.5 million total value of shipments and other receipts of establishments classified as elevators and moving stairways, \$11 million were products primary to other industries; and \$23 million were receipts for miscellaneous activities. The industry shipments of primary products represented 96 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 97 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture <sup>3</sup>	Cost of materials	Value of shipments <sup>3</sup>	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
INDUSTRY 3534.--ELEVATORS AND MOVING STAIRWAYS														
1967 Census....	138	74	13.8	106.2	8.8	18.0	63.0	193.9	127.5	316.5	3.9	96.3	96	94
1966 ASM <sup>1</sup> .....	(NA)	(NA)	14.0	105.1	8.5	17.8	58.1	235.5	125.7	352.5	4.3	92.5	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	13.4	99.6	8.1	17.1	55.2	217.8	120.8	339.1	11.3	74.5	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	13.4	95.3	8.1	15.8	50.0	234.1	123.2	347.4	5.2	74.3	(NA)	(NA)
1963 Census....	142	74	12.4	88.4	7.4	15.5	49.6	201.5	114.7	318.6	3.3	66.0	97	95
1962 ASM <sup>1</sup> .....	(NA)	(NA)	*9.5	*72.2	*5.5	*11.5	*38.8	*195.9	*111.5	*312.5	*1.6	*59.1	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	*9.8	*67.0	*5.5	*11.5	*36.0	*179.5	*88.6	*265.1	*2.8	*63.4	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	8.9	59.7	5.3	10.5	31.8	149.7	83.6	235.4	1.3	47.6	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	9.3	55.9	5.5	11.7	31.6	135.2	80.5	216.8	*1.1	48.5	(NA)	(NA)
1958 Census <sup>2</sup> ...	144	76	9.6	55.7	5.9	11.8	31.2	126.3	71.1	192.8	2.3	48.4	97	80

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

<sup>3</sup>The figures for 1967 are not comparable with those for earlier years because some companies previously included construction receipts with value of shipments. Value added by manufacture and value of shipments for 1967 would have been \$50 to \$75 million higher had they been on a basis comparable with earlier years.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

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BUREAU OF THE CENSUS George Hay Brown, Director

## 1967 CENSUS OF MANUFACTURES

The total value of elevators and moving stairways shipped by all producers in 1967 was \$300.4 million of which \$282 million, or 94 percent, were shipped by plants classified in industry 3534, Elevators and Moving Stairways, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 95 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
	INDUSTRY 3534. --ELEVATORS AND MOVING STAIRWAYS												
United States, total.....	138	74	13.8	106.2	8.8	18.0	63.0	193.9	127.5	316.5	3.9	12.4	201.5
New England.....	9	5	0.4	3.5	0.3	0.6	2.1	5.8	4.1	10.0	0.1	0.4	4.3
Middle Atlantic.....	30	18	7.0	58.2	4.5	9.3	35.3	95.7	65.4	159.6	1.7	7.0	137.5
East North Central....	43	27	3.4	23.6	2.4	4.8	14.8	55.0	28.4	79.8	1.3	2.5	29.4
Ohio.....	14	9	1.2	8.3	0.8	1.5	5.1	16.8	11.3	26.9	0.3	1.2	12.3
Michigan.....	5	4	0.2	1.3	0.1	0.2	0.6	3.5	1.1	4.4	0.1	(D)	(D)
Wisconsin.....	6	3	0.1	1.2	0.1	0.2	0.8	1.9	1.1	3.1	(2)	(D)	(D)
West North Central....	17	5	0.6	4.5	0.4	0.8	2.4	7.8	7.9	15.8	0.4	0.2	2.3
South.....	20	12	1.6	11.7	0.8	1.6	5.0	19.4	16.2	34.9	0.3	1.4	14.5
Pacific.....	19	7	0.6	4.7	0.5	0.9	3.3	10.3	5.4	16.2	0.1	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(2) Less than \$50 thousand.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (number of units)	Value (million dollars)	Quantity (number of units)	Value (million dollars)
3534- --	ELEVATORS AND MOVING STAIRWAYS, TOTAL.....	(X)	300.4	(X)	248.2
	Elevators (except farm and portable):				
35340 11	Electric passenger (except residence lifts).....	6,385	116.5	5,930	108.1
35340 12	Hydraulic passenger.....	2,733	21.0	2,184	13.3
35340 13	Electric freight.....	848	7.3	1,040	10.8
35340 15	Hydraulic freight.....	1,685	9.5	2,536	11.6
35340 31	Automobile lifts (service station and garage type).....	45,178	26.6	34,026	20.0
35340 51	Moving stairways and escalators.....	662	14.4	672	12.7
35340 96	Other nonfarm elevators (including sidewalk elevators, dumbwaiters, man lifts, hand-operated freight elevators, residence lifts, etc.).....	(X)	18.9	(X)	9.9
35340 97	Parts and attachments for elevators and moving stairways (sold separately).....	(X)	58.1	(X)	53.7
35340 00	Elevators and moving stairways, n.s.k. (For companies with 10 or more employees. See Note.).....	(X)	26.0	}	8.1
35340 02	Elevators and moving stairways, n.s.k. (For companies with less than 10 employees. See Note.).....	(X)	2.1		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind. (X) Not applicable.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3534.--ELEVATORS AND MOVING STAIRWAYS					
	Materials, parts, containers, and supplies, total.....		(X)	120.8	(X)	108.2
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	13.8	2.5	18.5	3.3
331012	Sheet and strip.....	do.	14.2	2.5	20.2	3.5
331013	Plates.....	do.	8.9	1.5	8.9	1.4
331015	Structural shapes.....	do.	18.1	3.2	17.4	2.7
331017	Wire and wire Products.....	do.			1.4	1.0
331019	All other carbon steel mill shapes and forms.....	do.	15.6	3.2	21.0	4.7
331020	Alloy steel (except stainless).....	do.	0.1	(Z)	0.9	0.3
331031	Stainless steel.....	do.	1.3	1.6	0.6	0.7
	Copper and copper-base alloy:					
335790	Insulated wire and cable.....	Million lbs. (copper content)	(D)	(D)	2.8	2.0
335102	Rod, bar, and mechanical wire including extruded and/or drawn shapes.....	Million lbs.			0.3	0.1
335123	Plate, sheet, and strip, including military cups and discs..	do.	0.3	0.3	0.5	0.4
335127	Pipe and tube.....	do.	(NA)	0.8	0.8	0.5
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	do.			0.1	(Z)
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	do.	1.4	0.8	0.4	0.2
335209	All other aluminum mill shapes and forms (wire, rolled, rod, and bar, powder, welded tubing, etc.).....	do.			0.1	(Z)
	Castings (rough and semifinished): <sup>1</sup>					
332011	Iron (gray and malleable).....	1,000 short tons.	11.4	4.6	8.5	3.2
332300	Steel.....	do.	3.7	3.4	1.3	1.2
339100	Iron and steel forgings <sup>1</sup> .....	do.	(D)	(D)	0.8	0.6
351901	Gasoline and other carburetor engines <sup>1</sup> .....	Thousands.....	(D)	(D)	(D)	(D)
	Electric motors and generators:					
362115	Fractional horsepower electric motors (under 1 hp.) (excluding timing motors).....	do.	12.3	0.7	12.8	0.8
362120	Integral horsepower motors and generators (1 hp. and over)....	do.	7.7	3.6	9.5	4.1
	Bearings:					
356218	Ball.....	do.	(X)	1.0	(X)	1.2
356201	Roller.....	do.	(X)	0.4	(X)	0.4
970099	All other materials, and components, parts, containers, and supplies consumed.....	do.	(X)	51.9	(X)	60.2
976000	Materials, parts, containers, and supplies, n. s. k.....	do.	(X)	38.5	(X)	15.7

(D) Included with "All other materials and components," code 970099, to avoid disclosing figures of individual companies.

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable. (Z) Less than 0.1 when rounded.

<sup>1</sup>No data are available on the quantities of castings, iron and steel forgings, gasoline engines or electric motors and generators produced and consumed in the same establishment.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3534, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

**U.S. DEPARTMENT OF COMMERCE  
BUREAU OF THE CENSUS  
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# 1967 CENSUS OF MANUFACTURES



MC67(P)-35B-5

## INDUSTRY SERIES

### Conveyors and conveying equipment

SIC Code 3535

**preliminary  
report**

The Conveyors and Conveying Equipment Industry includes establishments primarily engaged in manufacturing conveyors and conveying equipment for installation in factories, warehouses, mines, and other industrial and commercial establishments. Establishments primarily engaged in manufacturing passenger or freight elevators, dumb waiters, and moving stairways are classified in industry 3534; and overhead traveling cranes and monorail systems in industry 3536.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Conveyors and Conveying Equipment Industry amounted to \$756.9 million, an increase of 53 percent compared with 1963. Value added by manufacture at \$413.6 million in 1967 was 53 percent more than value added in 1963. Average employment in the industry showed an increase of 32 percent from 1963 to a total of 27.4 thousand employees in 1967.

Of the \$756.9 million total value of shipments and other receipts of establishments classified in the Conveyors and Conveying Equipment Industry, \$92 million were products primary to other industries; and \$119 million were receipts

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3535.--CONVEYORS AND CONVEYING EQUIPMENT														
1967 Census....	445	215	27.4	211.8	16.7	34.9	110.8	413.6	349.2	756.9	13.7	128.8	86	83
1967 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1966 ASM <sup>1</sup> .....	(NA)	(NA)	25.8	201.1	16.3	34.8	110.6	386.0	345.6	725.4	12.3	119.9	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	25.0	182.0	15.3	32.5	97.5	351.3	319.6	655.5	9.0	106.6	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	22.2	161.7	13.7	29.3	85.2	306.6	261.1	567.1	8.0	85.2	(NA)	(NA)
1963 Census....	454	175	20.8	140.6	12.6	26.3	74.0	270.5	231.1	494.6	6.1	79.3	82	83
1962 ASM <sup>1</sup> .....	(NA)	(NA)	21.2	137.0	12.7	25.2	70.9	249.2	215.8	460.3	9.1	76.7	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	19.9	121.4	11.5	23.7	61.4	215.3	181.9	399.8	*6.1	68.4	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	21.5	132.5	12.6	26.5	69.2	240.0	203.9	439.7	6.0	73.6	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	21.4	129.6	13.0	26.1	67.7	229.4	198.5	425.4	4.5	69.8	(NA)	(NA)
1958 Census <sup>2</sup> ...	420	150	20.8	119.4	12.7	25.6	62.6	192.9	187.0	385.7	7.2	63.1	81	78

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

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for miscellaneous activities. The industry shipments of primary products represented 86 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 82 percent in 1963.

The total value of conveyors and conveying equipment shipped by all producers in 1967 was \$656.7 million of which \$546 million, or 83 percent, were shipped by plants classified in industry

3535, Conveyors and Conveying Equipment, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was also 83 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

#### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3535, the Census Bureau collects current statistics on underground mine conveyors. These data appear in the Current Industrial Reports series:

MA-35F, "Mining Machinery and Equipment."

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)						
INDUSTRY 3535.--CONVEYORS AND CONVEYING EQUIPMENT													
United States, total.....	445	215	27.4	211.8	16.7	34.9	110.8	413.6	349.2	756.9	13.7	20.8	270.5
New England.....	16	4	0.3	2.7	0.2	0.5	1.7	4.5	3.0	7.3	0.1	0.3	3.8
Massachusetts.....	11	3	0.3	2.1	0.2	0.4	1.4	3.6	2.5	5.8	0.1	0.3	3.4
Middle Atlantic.....	84	35	7.3	55.7	4.1	8.4	27.0	108.0	98.9	204.7	3.7	5.8	75.5
New York.....	27	10	1.6	11.8	0.9	1.8	5.3	22.9	13.8	34.9	0.7	1.2	14.5
New Jersey.....	23	8	1.5	11.9	0.9	1.8	6.1	24.4	23.2	47.5	0.6	1.2	14.7
Pennsylvania.....	34	17	4.2	31.9	2.4	4.8	15.6	60.7	61.8	122.3	2.4	3.4	46.5
East North Central....	169	95	10.9	91.2	6.7	14.0	48.9	171.7	142.1	311.6	6.1	8.6	117.4
Ohio.....	37	30	3.0	22.7	1.9	4.2	12.6	38.8	36.2	75.2	0.8	1.8	19.3
Indiana.....	11	3	0.2	1.1	0.1	0.2	0.8	2.0	1.3	3.3	0.1	0.2	1.0
Illinois.....	44	20	3.0	22.6	1.9	3.9	12.5	51.0	34.1	84.7	2.4	2.2	27.6
Michigan.....	62	34	4.5	42.2	2.6	5.3	21.8	73.6	66.1	137.5	2.7	3.8	61.9
Wisconsin.....	15	8	0.3	2.6	0.2	0.4	1.3	6.3	4.5	10.9	0.1	0.6	7.6
West North Central....	38	19	2.0	16.6	1.2	2.6	7.9	29.6	22.2	52.7	0.9	1.7	21.3
Minnesota.....	11	5	0.7	5.0	0.4	0.8	2.6	8.7	6.9	15.7	0.4	0.6	5.9
Iowa.....	7	4	0.2	1.3	0.1	0.3	0.7	2.3	1.9	4.1	0.1	0.1	2.3
South Atlantic.....	34	15	1.2	8.4	0.8	1.6	4.0	22.9	19.0	40.8	0.6	0.7	11.0
Florida.....	7	2	0.1	0.5	0.1	0.1	0.2	1.0	0.4	1.4	(Z)	(D)	(D)
East South Central....	19	11	2.2	14.3	1.6	3.4	9.1	31.2	28.9	60.3	1.0	1.6	19.9
West South Central....	33	15	1.7	10.3	1.1	2.5	5.6	19.7	17.2	36.4	0.7	0.8	7.0
Texas.....	21	12	1.4	8.7	0.9	2.1	4.7	16.5	14.8	30.9	0.6	0.5	5.0
Mountain.....	11	4	0.3	1.8	0.2	0.4	1.1	4.1	2.3	6.2	0.1	0.1	1.7
Pacific.....	41	17	1.4	10.8	0.7	1.5	5.3	22.0	15.7	37.0	0.6	1.1	12.7
California.....	32	14	1.1	9.1	0.6	1.3	4.3	19.0	13.8	32.2	(D)	0.9	10.9

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Value of shipments including interplant transfers (million dollars)	
		1967	1963
3535- --	CONVEYORS AND CONVEYING EQUIPMENT, TOTAL.....	656.7	414.8
35351 --	Conveyors and conveying equipment (except hoists and farm elevators).....	480.1	306.2
35351 11	Gravity conveyors (skate, wheel, and roller).....	45.3	29.9
35351 31	Overhead trolley conveyor systems.....	44.0	38.1
35351 41	Pneumatic tube systems, including foot-power units.....	29.9	13.5
35351 51	Portable conveyors (except farm).....	28.8	13.1
35351 61	Underground mine conveyors and conveying systems.....		11.6
	Other conveyors and conveying systems (including specially engineered conveyor installations):		
	Bulk material conveyors:		
35351 65	Belt conveyors and systems for bulk materials.....	187.4	113.8
35351 67	Bucket elevators and other bulk material conveyors except belt conveyors.....	38.0	
35351 73	Package (unit) conveyors.....	84.6	81.2
35351 00	Conveyors and conveying equipment (except hoists), n.s.k.....	22.1	4.9
35352 11	Parts, attachments, and accessories for conveyors and conveying systems (sold separately).....	118.6	80.0
35350 00	Conveyors and conveying equipment (including parts), n.s.k. (For companies with 10 or more employees. See Note.).....	48.9	20.6
35350 02	Conveyors and conveying equipment (including parts), n.s.k. (For companies with less than 10 employees. See Note.).....	9.1	

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3535. CONVEYORS AND CONVEYING EQUIPMENT					
	Materials, parts, containers, and supplies, total.....		(X)	268.3	(X)	174.0
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	53.0	9.5	42.9	7.6
331012	Sheet and strip.....	..do.....	81.7	13.4	57.5	8.8
331013	Plates.....	..do.....	47.5	7.6	37.9	5.6
331015	Structural shapes.....	..do.....	68.2	10.8	46.7	8.0
331017	Wire and wire products.....	..do.....	3.1	1.9	1.7	0.9
331019	All other carbon steel mill shapes and forms.....	..do.....	<sup>1</sup> 17.2	<sup>1</sup> 4.6	28.0	5.4
331020	Alloy steel (except stainless).....	..do.....	2.6	1.2	4.4	1.4
331031	Stainless steel.....	..do.....	2.7	3.7	2.2	2.7
	Copper and copper base alloy:					
335790	Insulated wire and cable.....	Million lbs. (copper content)	0.4	0.4	0.3	0.2
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	(NA)	0.5	0.4	0.2
335123	Plate sheet, and strip, including military cups and discs...	..do.....	0.3	0.3	0.2	0.1
335127	Pipe and tube.....	..do.....	( <sup>2</sup> )	( <sup>2</sup> )	2.4	1.6
	Aluminum and aluminum base alloy:					
335202	Sheet, plate, and foil.....	..do.....	2.9	1.8	1.4	0.7
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	..do.....	2.2	1.1	1.7	1.0
335209	All other aluminum mill shapes and forms (wire, rolled rod, and bar, powder, welded tubing, etc.).....	..do.....	(NA)	0.2	0.2	0.2
	Castings (rough and semifinished): <sup>3</sup>					
332011	Iron (gray and malleable).....	1,000 short tons.	11.2	4.6	12.3	5.2
332300	Steel.....	..do.....	(NA)	2.4	2.1	1.3
339100	Iron and steel forgings <sup>3</sup> .....	..do.....	( <sup>4</sup> )	( <sup>4</sup> )	3.7	2.7
351901	Gasoline and other carburetor engines <sup>3</sup> .....	1,000.....	(NA)	0.2	0.9	0.2
	Electric motors and generators: <sup>3</sup>					
362115	Fractional horsepower electric motors (under 1 hp.) (excluding timing motors).....	..do.....	42.4	3.1	36.5	2.6
362120	Integral horsepower motors and generators (1 hp. and over)....	..do.....	24.5	4.0	19.5	3.4
	Bearings:					
356218	Ball.....	..do.....	(X)	4.5	(X)	2.9
356201	Roller.....	..do.....	(X)	3.7	(X)	1.8
369101	Storage batteries.....	1,000.....	( <sup>4</sup> )	( <sup>4</sup> )	0.5	(2)
970099	All other material and components, parts, containers, and supplies consumed.....	..do.....	(X)	112.9	(X)	81.7
976000	Materials, parts, containers, and supplies, n.s.k. <sup>5</sup> .....	..do.....	(X)	70.8	(X)	27.4

(NA) Not available. (X) Not applicable.

<sup>1</sup>These figures are understated by \$5 million or less because of apparent underaverage of carbon steel pipe and tube.<sup>2</sup>Included with material code 970099, "All other materials and components, etc."<sup>3</sup>No data are available for the quantities of castings, forgings, engines or electric motors and generators produced and consumed in the same establishment except for iron castings (9.8 thousand short tons) and fractional horsepower electric motors (excluding timing motors) (0.3 thousand units) in 1963.<sup>4</sup>Included with material code 970099. "All other materials and components, etc." to avoid disclosing figures for individual companies.<sup>5</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3535, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

**U.S. DEPARTMENT OF COMMERCE  
BUREAU OF THE CENSUS  
WASHINGTON, D.C. 20233**

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# 1967 CENSUS OF MANUFACTURES

INDUSTRY SERIES



MC67(P)-35B-6

**preliminary  
report**

## Hoists, cranes, and monorails

SIC Code 3536

The Hoists, Industrial Cranes, and Monorail Systems Industry includes establishments primarily engaged in manufacturing overhead traveling cranes, hoists, and monorail systems for installation in factories, warehouses, and other industrial and commercial establishments.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Hoists, Cranes, and Monorails Industry amounted to \$431 million, an increase of 96 percent compared with 1963. Value added by manufacture at \$231.3 million in 1967 was 106

percent more than value added in 1963. Average employment in the industry showed an increase of 68 percent from 1963 to a total of 16.1 thousand employees in 1967.

Of the \$431 million total value of shipments and other receipts of establishments classified as hoists, cranes, and monorails, \$81 million were products primary to other industries; and \$34 million were receipts for miscellaneous activities. The industry shipments of primary products represented 80 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was also 80 percent in 1963.

The total value of hoists, cranes, and monorails shipped by all producers in 1967 was \$375.3

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total  (number)	With 20 employees or more (number)	Number  (1,000)	Payroll  (million dollars)	Number  (1,000)	Man-hours  (millions)	Wages  (million dollars)							
INDUSTRY 3536.—HOISTS, CRANES, AND MONORAILS														
1967 Census....	140	70	16.1	129.4	11.1	23.0	84.4	231.3	196.0	430.7	10.5	91.4	80	84
1966 ASM¹.....	(NA)	(NA)	16.5	130.5	11.7	25.2	86.1	236.7	205.2	437.3	10.1	99.4	(NA)	(NA)
1965 ASM¹.....	(NA)	(NA)	10.3	76.4	7.5	16.0	50.7	144.8	132.9	270.2	4.6	56.4	(NA)	(NA)
1964 ASM¹.....	(NA)	(NA)	9.9	72.2	7.1	15.3	46.3	119.1	119.4	237.7	3.2	46.6	(NA)	(NA)
1963 Census....	120	56	9.6	64.3	6.8	14.0	41.4	112.3	110.9	220.0	2.6	45.4	80	70
1962 ASM¹.....	(NA)	(NA)	8.5	54.0	5.8	11.7	32.6	88.4	77.2	166.0	3.3	38.3	(NA)	(NA)
1961 ASM¹.....	(NA)	(NA)	8.5	50.7	5.7	11.5	30.1	82.2	77.6	162.6	3.3	41.3	(NA)	(NA)
1960 ASM¹.....	(NA)	(NA)	9.6	57.7	6.8	13.5	35.3	93.1	91.6	188.2	4.5	45.1	(NA)	(NA)
1959 ASM¹.....	(NA)	(NA)	8.8	50.9	6.2	12.3	30.7	85.9	82.1	164.3	2.6	47.6	(NA)	(NA)
1958 Census²....	81	54	9.5	53.6	6.6	13.0	32.8	92.8	85.5	184.7	5.1	43.7	79	78

(NA) Not available.

basis of a consistency review.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director



million of which \$316 million, or 84 percent, were shipped by plants classified in industry 3536, Hoists, Cranes, and Monorails, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 70 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3536.—HOISTS, CRANES, AND MONORAILS												
United States, total.....	140	70	16.1	129.4	11.1	23.0	84.4	231.3	196.0	430.7	10.5	9.6	112.3
Northeast.....	28	14	1.8	13.9	1.2	2.6	8.8	28.4	19.2	48.7	2.5	1.4	18.9
New Jersey.....	7	4	0.1	1.2	0.1	0.2	0.7	2.7	3.4	6.1	(D)	(D)	(D)
North Central.....	58	37	11.6	94.8	7.9	16.5	62.8	159.2	137.4	300.8	6.0	5.9	65.7
Ohio.....	17	13	3.4	28.4	2.3	4.8	19.2	42.6	47.7	93.4	(D)	2.7	26.5
South.....	19	7	1.3	9.5	0.9	2.0	5.6	19.8	14.0	33.5	1.5	0.9	11.2
Texas.....	8	1	0.2	1.4	0.1	0.3	1.0	3.9	3.1	6.9	(D)	0.1	1.9
West.....	35	12	1.3	11.1	1.0	1.8	7.2	23.9	25.4	47.7	0.5	1.4	16.5

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (number of units)	Value (million dollars)	Quantity (number of units)	Value (million dollars)
3536- --	HOISTS, CRANES, AND MONORAILS, TOTAL.....	(X)	375.3	(X)	224.2
35361 --	Hoists, total.....	(X)	136.2	(X)	105.0
35361 12	Hand and electric chain hoists.....	164.8	27.5	168.4	22.8
35361 14	Mine shaft and slope electric wire rope hoists.....	(X)	( <sup>1</sup> )	0.2	3.0
35361 16	Other electric wire rope hoists.....	28.8	31.3	22.7	20.3
35361 37	Air hoists.....	8.7	6.0	11.4	10.1
35361 38	Other hoists.....	138.5	43.3	112.0	32.0
35361 45	Parts and attachments for hoists (sold separately).....	(X)	21.5	(X)	16.1
35361 00	Hoists, n.s.k.....	(X)	6.6	(X)	0.6
35362 --	Overhead traveling cranes and monorail systems, total.....	(X)	216.4	(X)	115.7
	Cranes (except construction power cranes):				
35362 12	Electric overhead traveling:				
	Bridge type.....	9.8	161.9	3.1	79.0
35362 14	Other, including jib type.....	(NA)	7.8	2.4	7.7
35362 15	Hand power overhead traveling.....	1.9	2.3	2.0	2.3
35362 53	Monorail systems.....	(NA)	23.7	2.8	13.2
35362 55	Parts and attachments for overhead traveling cranes and monorail systems (sold separately).....	(X)	16.9	(X)	13.0
35362 00	Overhead traveling cranes and monorail systems, n.s.k.....	(X)	3.8	(X)	0.4
35360 00	Hoists, industrial cranes, and monorail systems, n.s.k. (Companies with 10 or more employees. See Note.).....	(X)	21.0	}	3.5
35360 02	Hoists, industrial cranes, and monorail systems, n.s.k. (Companies with less than 10 employees. See Note.).....	(X)	1.7		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Included with product code 3536138, Other hoists, to avoid disclosing figures of individual companies.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3536.--HOISTS, CRANES, AND MONORAILS					
	Materials, parts, containers, and supplies, total.....		(X)	171.9	(X)	101.4
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bar and bar shapes.....	1,000 short tons.	21.7	4.2	15.8	3.1
331012	Sheet and strip.....	do.....	7.5	1.2	7.2	1.0
331013	Plates.....	do.....	79.1	12.4	6.6	10.4
331015	Structural shapes.....	do.....	33.1	5.7	47.4	7.2
331017	Wire and wire products.....	do.....	0.8	0.5	1.1	0.6
331019	All other carbon steel mill shapes and forms.....	do.....	8.1	1.9	12.2	3.0
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	do.....	13.5	3.7	1.5	0.6
331029	All other alloy steel mill shapes and forms.....	do.....			0.7	0.5
331031	Stainless steel.....	do.....			0.1	0.1
	Copper and copper-base alloy:					
335790	Insulated wire and cable.....	Million lbs.....	2.4	2.3	1.7	1.3
335102	Rod, bar, and mechanical wire including extruded and/or drawn shapes.....	do.....	(NA)	1.8	0.2	0.1
335123	Plate, sheet strip, including military cups and discs.....	do.....			1.1	0.5
335127	Pipe and tube.....	do.....				
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	do.....	0.7	0.4	0.5	0.3
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	do.....			0.3	0.2
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	do.....			(Z)	(Z)
331051	Pig iron, excluding silvery iron.....	1,000 short tons.	(X)	(Z)	( <sup>1</sup> )	( <sup>1</sup> )
999811	Iron and steel scrap, excluding home scrap.....	do.....	-	-	( <sup>1</sup> )	( <sup>1</sup> )
	Castings (rough and semifinished): <sup>2</sup>					
332011	Iron (gray and malleable).....	do.....	10.6	5.7	7.9	3.4
332300	Steel.....	do.....	7.3	5.6	6.2	4.3
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	1.4	1.3	1.1	1.2
336200	Copper and copper-base alloy.....	do.....	1.2	0.9	1.0	0.7
339100	Iron and steel forgings <sup>2</sup> .....	1,000 short tons.	4.8	2.8	14.0	3.1
	Engines: <sup>2</sup>					
351920	Diesel and semidiesel.....	1,000.....	( <sup>3</sup> )	( <sup>3</sup> )	(Z)	0.3
351901	Gasoline and other carburetor.....	do.....	1.4	0.3	1.7	0.3
362120	Integral horsepower electric motors and generators (1 hp. and over) <sup>2</sup> .....	do.....	33.5	6.9	21.0	7.2
	Bearings:					
356218	Ball.....	do.....	(X)	1.7	(X)	1.0
356201	Roller.....	do.....	(X)	3.1	(X)	1.8
301131	Pneumatic tires.....	1,000.....	( <sup>3</sup> )	( <sup>3</sup> )	3.4	0.2
356601	Mechanical power transmission equipment, (except motor vehicle) including gears, clutches, etc.....	do.....	(X)	3.6	(X)	4.8
970099	All other materials and components, parts, containers and supplies consumed.....	do.....	(X)	60.0	(X)	38.9
976000	Materials, parts, containers, and supplies, n.s.k.....	do.....	(X)	45.9	(X)	5.4

- Represents zero. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable. (Z) Less than 0.1 when rounded.

<sup>1</sup>Included with material code 970099, "All other materials and components...." to avoid disclosing figures of individual companies.<sup>2</sup>No data are available on quantities of castings, iron and steel forgings, engines or integral horsepower electric motors and generators produced and consumed in the same establishment.<sup>3</sup>Included with material code 970099, "All other materials and components...." to avoid disclosing figures of individual companies.<sup>4</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3536, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

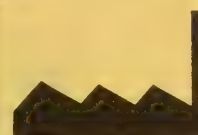
**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# 1967 CENSUS OF MANUFACTURES



MC67(P)-35B-7

## INDUSTRY SERIES

### Industrial trucks and tractors

SIC Code 3537

**preliminary  
report**

The Industrial Trucks, Tractors, Trailers, and Stackers Industry includes establishments primarily engaged in manufacturing industrial trucks, tractors, trailers, stackers (truck-type), and related equipment, used for handling materials on floors and paved surfaces in and around industrial and commercial plants, depots, docks, and terminals. Establishments primarily engaged in manufacturing motor vehicles and motor vehicle-type trailers are classified in Group 371; farm-type wheel tractors in industry 3522; wheel tractor shovel loaders and tracklaying tractors in industry 3531; and wood pallets and skids in industry 2499.

The classification of establishments for which data are tabulated in this report is based upon the

definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Industrial Trucks and Tractors Industry amounted to \$768.3 million, an increase of 72 percent compared with 1963. Value added by manufacture at \$403.1 million in 1967 was 73 percent more than value added in 1963. Average employment in the industry showed an increase of 50 percent from 1963 to a total of 26.7 thousand employees in 1967.

Of the \$768.3 million total value of shipments and other receipts of establishments classified as industrial trucks and tractors, \$46 million were receipts for miscellaneous activities.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3537.--INDUSTRIAL TRUCKS AND TRACTORS														
1967 Census . . .	347	138	26.7	198.3	17.5	35.8	114.8	403.1	377.3	768.3	25.3	194.5	93	87
1966 ASM <sup>1</sup> . . . . .	(NA)	(NA)	26.3	189.9	17.8	37.9	116.8	404.9	420.0	792.1	18.4	184.5	(NA)	(NA)
1965 ASM <sup>1</sup> . . . . .	(NA)	(NA)	21.5	152.6	14.2	31.0	92.3	321.2	318.9	627.7	11.6	131.9	(NA)	(NA)
1964 ASM <sup>1</sup> . . . . .	(NA)	(NA)	19.9	130.8	15.0	28.1	76.2	274.5	266.9	533.0	9.4	117.9	(NA)	(NA)
1963 Census . . . . .	314	108	17.6	110.4	11.5	23.8	64.5	233.1	215.5	447.0	6.7	97.6	90	81
1962 ASM <sup>1</sup> . . . . .	(NA)	(NA)	16.5	100.4	10.8	22.2	58.1	175.4	190.7	360.6	4.1	88.1	(NA)	(NA)
1961 ASM <sup>1</sup> . . . . .	(NA)	(NA)	15.7	90.8	9.9	20.3	49.9	144.8	167.5	319.4	*4.4	84.0	(NA)	(NA)
1960 ASM <sup>1</sup> . . . . .	(NA)	(NA)	17.5	100.7	11.6	24.1	59.5	169.3	194.8	366.0	6.0	89.9	(NA)	(NA)
1959 ASM <sup>1</sup> . . . . .	(NA)	(NA)	15.3	88.4	10.0	21.1	52.1	170.4	176.6	333.2	4.3	91.2	(NA)	(NA)
1958 Census <sup>2</sup> . . . .	262	96	14.8	76.2	9.5	18.1	43.0	117.5	140.4	269.3	3.3	75.4	93	84

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued August 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE    Maurice H. Stans, Secretary  
Rocco C. Siciliano, Under Secretary  
BUREAU OF THE CENSUS



The industry shipments of primary products represented 93 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 90 percent in 1963.

The total value of industrial trucks and tractors shipped by all producers in 1967 was \$766.8 million of which \$667 million, or 87 percent, were shipped by plants classified in industry 3537, Industrial Trucks and Tractors, while the remainder was shipped by plants

classified in other industries. This percent, called the coverage ratio, was 81 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

1967 CENSUS OF MANUFACTURES  
TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)						
INDUSTRY 3537.--INDUSTRIAL TRUCKS AND TRACTORS													
United States, total.....	347	138	26.7	198.3	17.5	35.8	114.8	403.1	377.3	768.3	25.3	17.6	233.1
New England.....	14	7	1.4	9.2	0.9	1.8	5.5	11.8	11.9	26.5	0.3	0.9	10.4
Middle Atlantic.....	60	22	5.4	40.7	3.3	6.8	21.8	77.7	66.0	139.6	5.0	3.9	51.1
East North Central...	114	59	13.3	101.9	8.9	18.4	63.6	219.2	221.1	434.3	14.1	8.1	119.3
Ohio.....	39	22	4.9	37.7	3.2	6.6	23.9	68.8	58.5	124.2	8.6	3.1	35.0
Indiana.....	8	4	0.2	1.1	0.1	0.3	0.8	2.4	3.4	5.5	(Z)	0.1	1.6
Wisconsin.....	12	7	0.4	2.5	0.3	0.6	1.7	6.0	6.4	12.1	0.2	0.3	3.7
West North Central...	26	8	0.8	4.9	0.6	1.2	2.7	10.4	6.3	16.4	0.2	0.6	5.0
Kansas.....	5	2	0.1	0.3	0.1	0.1	0.2	0.7	0.8	1.5	(Z)	(D)	(D)
South Atlantic.....	27	7	0.3	1.9	0.3	0.5	1.2	3.9	4.1	8.1	0.2	0.5	5.0
North Carolina.....	5	3	0.1	0.4	0.1	0.2	0.3	0.9	0.8	1.6	(D)	(D)	(D)
South Carolina.....	4	2	0.1	0.3	0.1	0.1	0.2	0.7	0.5	1.2	(D)	(D)	(D)
Georgia.....	7	1	0.1	0.5	0.1	0.1	0.3	1.2	2.1	3.3	(Z)	0.2	2.3
East South Central...	17	8	1.2	6.7	0.8	1.7	3.5	12.1	14.3	26.3	0.8	0.7	7.4
West South Central...	13	7	0.5	3.5	0.4	0.7	1.9	7.2	8.8	14.7	0.5	0.5	5.2
Texas.....	9	5	0.5	3.4	0.3	0.7	1.8	6.9	8.5	14.0	0.5	0.4	4.8
West.....	76	19	3.7	29.5	2.4	4.6	14.5	60.7	44.7	102.4	4.2	2.4	29.7

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000)	Value (\$1,000)	Quantity (1,000)	Value (\$1,000)
3537- --	INDUSTRIAL TRUCKS AND TRACTORS, TOTAL.....	(X)	766.8		458.7
	Powered trucks and tractors:				
35370 11	Motorized handtrucks, pedestrian controlled.....	13.1	27.8	10.9	21.3
	Industrial trucks (operator riding) and tractors:				
	Electric (storage battery, gas-electric, gasoline-electric, diesel-electric, tethered electric):				
35370 23	Powered industrial trucks.....	20.7	120.9	(NA)	52.6
35370 27	Tractors, industrial.....	1.3	2.8		
	Internal combustion powered:				
	Powered industrial trucks:				
35370 36	Under 6,000 lb. capacity.....	30.6	150.8	128.6	1182.0
35370 37	6,000 to 14,999 lb. capacity.....	10.7	67.2		
35370 38	15,000 lb. capacity and above.....	2.3	59.5		
35370 43	Tractors, industrial.....	(X)	18.8	11.7	16.6
35370 49	All other industrial trucks (operator riding) and industrial tractors, including compressed-air powered, etc.....			(X)	114.4
35370 51	Portable elevators (stackers) excluding farm type.....			3.8	4.3
	Handtrucks and trailers, including dollies and platform trucks:				
35370 61	Handlift.....	(X)	19.2	(X)	10.0
35370 65	Other handtrucks and trailers, including 2-wheel, 4-wheel dollies, and platform trucks.....	(X)	36.3	(X)	32.2
35370 71	Metal pallets and skids (excluding wood and metal combination).....	(X)	20.5	(X)	12.1
35370 81	Parts and attachments and miscellaneous equipment (sold separately).....	(X)	157.7	(X)	91.7
35370 00	Industrial trucks and tractors, n.s.k. (For companies with 10 or more employees. See Note.).....	(X)	73.1	(X)	31.6
35370 02	Industrial trucks and tractors, n.s.k. (For companies with less than 10 employees. See Note.).....	(X)	6.2		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Represents gasoline powered units only. 1963 data for all other internal combustion powered industrial trucks and industrial tractors are included with product code 3537049, all other industrial trucks (operator riding) and industrial tractors, including compressed-air powered, etc.

## 1967 CENSUS OF MANUFACTURES

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963		
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)	
INDUSTRY 3537.--INDUSTRIAL TRUCKS AND TRACTORS							
	Materials, parts, containers, and supplies, total.....		(X)	329.3	(X)	192.5	
Mill shapes and forms (except castings):							
Carbon steel:							
331011	Bars and bar shapes.....	1,000 s. tons....	64.3	11.0	42.5	7.2	
331012	Sheet and strip.....	..do.....	57.4	8.8	43.4	6.4	
331013	Plates.....	..do.....	66.7	11.5	54.1	7.7	
331015	Structural shapes.....	..do.....	25.4	5.0	19.3	3.6	
331017	Wire and wire products.....	..do.....			0.4	0.1	
331019	All other carbon steel mill shapes and forms.....	..do.....	15.5	3.2	15.0	3.3	
331020	Alloy steel (except stainless).....	..do.....			2.6	0.9	
331031	Stainless steel.....	..do.....	11.4	4.3	0.4	0.6	
Copper and copper-base alloy:							
335790	Insulated wire and cable.....	Mil. lbs. (copper content).....	(X)	( <sup>1</sup> )	0.5	0.4	
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Mil. lbs.....			(Z)	(Z)	
335123	Plate, sheet, and strip, including military cups and discs...	..do.....	(NA)	3.3	(Z)	(Z)	
335127	Pipe and tube.....	..do.....			0.2	0.2	
Aluminum and aluminum-base alloy:							
335202	Sheet, plate, and foil.....	..do.....			1.4	0.7	
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	..do.....	(X)	(Z)	0.5	0.3	
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	..do.....			(Z)	(Z)	
Castings (rough and semifinished):							
332011	Iron (gray and malleable).....	1,000 s. tons....	51.2	14.4	33.7	8.4	
332300	Steel.....	..do.....	9.0	6.5	5.8	4.1	
339100	Iron and steel forgings.....	1,000 tons.....	3.8	3.4	2.7	2.8	
351901	Gasoline and other carburetor engines.....	1,000.....	43.4	17.3	29.5	11.2	
Electric motors and generators:							
362115	Fractional horsepower electric motors (under 1 hp.) (excluding timing motors).....	..do.....	(X)	( <sup>1</sup> )	9.4	0.6	
362120	Integral horsepower motors and generators (1 hp. and over)....	..do.....	(X)	( <sup>1</sup> )	21.7	2.3	
Bearings:							
356218	Ball.....	..do.....	(X)	( <sup>1</sup> )	(X)	1.9	
356201	Roller.....	..do.....	(X)	( <sup>1</sup> )	(X)	1.8	
369101	Storage batteries.....	1,000.....	67.1	4.2	33.6	2.8	
970099	All other materials and components, parts, containers and supplies consumed.....		(X)	183.0	(X)	110.9	
976000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> .....		(X)	53.6	(X)	14.4	

n.s.k. Not specified by kind. (X) Not applicable. (Z) Less than 0.1 when rounded.

<sup>1</sup>Less than \$2.5 million in 1967. Data are included with material code 970099, "All other materials and components, parts, containers and supplies consumed."<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3537, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-35C-1

INDUSTRY SERIES

**preliminary  
report**

## Machine tools, metal-cutting types

SIC Code 3541

The Machine Tools, Metal-Cutting Types, Industry includes establishments primarily engaged in manufacturing power-driven machines, not supported in the hands of an operator when in use, that shape metal by cutting or use of electrical techniques; the rebuilding of such machine tools, and the manufacture of replacement parts for them. Metalworking, or primarily metalworking, machine tools designed primarily for home workshops are also included. Establishments primarily engaged in the manufacture of electric welding equipment are classified in industry 3623; and portable power-driven handtools, gas welding and cutting equipment, and automotive maintenance equipment in industry 3548.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Machine Tools, Metal-Cutting Types, Industry amounted to \$2,127.5 million, an increase of 101 percent compared with 1963. Value added by manufacture at \$1,389.4 million in 1967 was 99 percent more than value added in 1963. Average employment in the industry showed an increase of 42 percent from 1963 to a total of 86.9 thousand employees in 1967.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Special-ization ratio (per-cent)	Coverage ratio (per-cent)
	Total  (number)	With 20 employees or more (number)	Number  (1,000)	Payroll  (million dollars)	Number  (1,000)	Man-hours  (millions)	Wages  (million dollars)							
INDUSTRY 3541.--MACHINE TOOLS, METAL-CUTTING TYPES														
1967 Census....	897	333	86.9	757.3	60.3	131.5	475.1	1,389.4	767.4	2,127.5	78.9	535.4	87	92
1966 ASM <sup>1</sup> .....	(NA)	(NA)	79.8	673.4	55.3	123.8	427.5	1,234.2	669.4	1,826.1	74.9	489.5	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	70.8	565.0	48.7	108.1	353.7	993.6	559.2	1,524.4	53.7	394.0	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	65.1	497.7	44.5	97.3	306.8	836.2	479.5	1,286.0	41.7	343.6	(NA)	(NA)
1963 Census.....	801	269	61.1	438.2	41.0	86.5	272.2	699.3	381.6	1,060.8	28.8	316.3	81	88
1962 ASM <sup>1</sup> .....	(NA)	(NA)	58.9	401.8	39.3	81.2	235.0	671.0	333.0	982.1	26.6	279.6	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	54.9	353.0	36.4	72.7	201.5	550.1	281.5	828.4	18.7	263.4	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	58.8	370.9	39.5	80.9	223.8	578.2	311.8	881.7	24.8	266.1	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	52.8	329.5	35.4	72.2	202.0	505.4	262.2	753.8	22.2	251.1	(NA)	(NA)
1958 Census <sup>2</sup> ...	627	231	52.9	300.3	36.2	69.6	182.2	421.0	217.7	679.8	18.8	231.8	85	89

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 2 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued December 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary  
Rocco C. Siciliano, Under Secretary  
Harold C. Passer, Assistant Secretary for Economic Affairs  
**BUREAU OF THE CENSUS** George Hay Brown, Director

Of the \$2,127.5 million of total value of shipments and other receipts of establishments classified as metal-cutting type machine tools, \$260 million were products primary to other industries; and \$133 million were receipts for miscellaneous activities. The industry shipments of primary products represented 87 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 81 percent in 1963.

The total value of metal-cutting machine tools shipped by all producers in 1967 was \$1,895.1

million of which \$1,735 million, or 92 percent, were shipped by plants classified in industry 3541, Machine Tools, Metal-Cutting Types, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 88 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3541, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MQ-35W, Metalworking Machinery.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture  (million dollars)	Cost of materials  (million dollars)	Value of shipments  (million dollars)	Capital expenditures, new  (million dollars)	All employees  (1,000)	Value added by manufacture  (million dollars)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
INDUSTRY 3541.--MACHINE TOOLS, METAL-CUTTING TYPES													
United States, total.....	897	333	86.9	757.3	60.3	131.5	475.1	1,389.4	767.4	2,127.5	78.9	61.1	699.3
New England.....	119	50	22.9	190.3	16.5	37.1	128.2	327.1	171.5	492.0	16.4	14.9	159.5
Massachusetts.....	41	15	4.5	35.4	2.8	5.9	19.8	65.6	24.5	90.3	2.6	(D)	(D)
Connecticut.....	60	26	10.2	88.5	8.1	18.6	65.5	150.8	83.9	231.8	7.3	4.3	52.6
Middle Atlantic.....	162	43	8.0	68.3	6.1	13.5	46.8	144.3	48.5	188.6	9.0	7.1	89.4
New York.....	72	21	5.6	47.7	4.2	9.4	33.2	105.7	31.0	132.8	6.4	5.0	66.6
New Jersey.....	48	11	0.7	5.6	0.5	1.1	3.8	11.2	4.4	14.7	0.8	0.5	5.6
Pennsylvania.....	42	11	1.8	15.0	1.3	3.0	9.7	27.5	13.1	41.1	1.8	1.5	17.2
East North Central....	427	190	49.8	448.5	33.2	71.5	268.6	824.6	496.1	1,304.8	45.6	36.8	424.5
Ohio.....	110	51	20.9	180.4	12.9	27.3	100.4	331.6	180.3	506.0	15.7	15.3	178.5
Illinois.....	107	46	9.5	84.0	6.5	14.7	50.8	143.0	95.2	242.3	9.1	6.7	71.9
Michigan.....	158	66	10.9	115.0	7.9	17.8	73.8	214.0	149.1	358.1	10.5	8.0	102.3
West North Central....	26	10	1.6	13.6	1.2	2.5	9.1	25.0	11.3	35.9	3.4	0.5	4.9
South.....	36	14	2.2	16.1	1.6	3.2	9.9	30.5	12.1	40.2	2.1	0.5	5.9
South Atlantic.....	13	3	0.3	1.9	0.2	0.5	1.3	3.0	1.0	4.0	0.6	(D)	(D)
Mountain.....	10	2	0.1	0.8	0.1	0.2	0.6	1.3	0.7	1.9	0.2	0.1	0.4
Pacific.....	117	24	2.3	19.7	1.7	3.5	12.1	36.6	27.1	64.0	2.3	1.2	14.6
California.....	109	22	2.2	18.8	1.6	3.3	11.4	34.6	26.2	61.0	2.2	1.1	14.6

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000 units)	Value (million dollars)	Quantity (1,000 units)	Value (million dollars)
3541- --	MACHINE TOOLS, METAL-CUTTING TYPES, TOTAL.....	(X)	1,895.1	(X)	925.3
35411 --	Boring machines:				
	As reported in the census of manufactures <sup>1</sup> .....	(X)	128.4	(X)	66.3
	As reported on Census form MQ-35W <sup>1</sup> .....	1.8	117.8	1.8	67.9
35412 --	Drilling machines:				
	As reported in the census of manufactures <sup>1</sup> .....	(X)	128.5	(X)	55.3
	As reported on census form MQ-35W <sup>1</sup> .....	48.7	122.8	24.4	52.0
35413 --	Gear cutting and finishing machines:				
	As reported in the census of manufactures <sup>1</sup> .....	(X)	67.1	(X)	40.9
	As reported on Census form MQ-35W <sup>1</sup> .....	1.6	62.9	1.4	39.5
35414 --	Grinding and polishing machines (excluding gear tooth grinding, honing, lapping, polishing, and buffing machines):				
	As reported in the census of manufactures <sup>1</sup> .....	(X)	270.2	(X)	144.2
	As reported on Census form MQ-35W <sup>1</sup> .....	91.4	247.8	52.4	137.0
35415 --	Lathes:				
	As reported in the census of manufactures <sup>1</sup> .....	(X)	360.5	(X)	163.4
	As reported on Census form MQ-35W <sup>1</sup> .....	27.6	334.0	19.7	154.8
35416 --	Milling machines:				
	As reported in the census of manufactures <sup>1</sup> .....	(X)	258.2	(X)	112.7
	As reported on Census form MQ-35W <sup>1</sup> .....	24.0	234.3	16.7	106.1
35418 --	Other machine tools (including those designed primarily for home workshops, laboratories, etc.), total.....	(X)	370.3	(X)	152.4
	Products included in the census of manufactures and on Census form MQ-35W:				
35418 90	As reported in the census of manufactures <sup>1</sup> .....	(X)	274.3	(X)	100.8
	As reported on Census form MQ-35W <sup>1</sup> .....	41.0	252.6	23.7	100.5
	Machine tools designed primarily for home workshops, laboratories, garages, etc. (metalworking and primarily metalworking only)				
35418 11	Drilling machines.....	(NA)	2.2	24.7	3.5
35418 31	Grinding and polishing machines.....	(NA)	12.5	(NA)	8.2
35418 51	Lathes.....	(NA)	3.0	(NA)	1.2
35418 71	Saws and sawing machines.....	(NA)	10.4	(NA)	8.9
35418 91	Other metalworking (or primarily metalworking) type.....	(NA)	56.0	(X)	29.9
35418 00	Other machine tools (including those designed primarily for home workshops, laboratories, etc.), n.e.c., n.s.k.....	(X)	11.9	(X)	-
35419 --	Parts for metal-cutting type machine tools, sold separately, and rebuilt machine tools, total.....	(X)	238.0	(X)	165.5
35419 11	Parts for metal-cutting machine tools (sold separately).....	(X)	218.4	(X)	136.3
35419 41	Rebuilt metal-cutting type machine tools.....	(X)	14.4	(X)	29.2
35419 00	Parts for metal-cutting type machine tools, sold separately, and rebuilt machine tools, n.s.k.....	(X)	5.2	(X)	-
35410 00	Machine tools, metal-cutting types, n.s.k. (For companies with ten or more employees. See Note.).....	(X)	61.7		
35410 02	Machine tools, metal-cutting types, n.s.k. (For companies with less than ten employees. See Note.).....	(X)	12.2	(X)	24.4

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

- Represents zero. (NA) Not available. n.e.c. Not elsewhere classified. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>For these products, data were also collected on Census Quarterly Form MQ-35W. In lieu of asking for detailed statistics on these products in the census of manufactures, respondents were asked to report only value of shipments for specified classes of products for which separate figures had previously been collected on the Quarterly Form MQ-35W. In most cases, the value figures reported in the census of manufactures for each class of products agreed closely with the corresponding figures reported in the quarterly survey. However, there were some differences between the census figures and the quarterly survey figures. These variations were due primarily to the following reasons:

- Census of manufactures reports correctly including all accessories or attachments ordered and shipped with the machine. In some cases the quarterly survey represents only the value of the basic machine. This is the most significant factor for these differences.
- Use of different bases for reporting value (company sales vs. factory production).
- Use of estimates in reporting data on the quarterly survey, whereas census of manufactures figures generally represent more exact shipments figures.

See Current Industrial Reports Series MQ-35W, Metalworking Machinery, for detailed product data.

The nomenclature used to describe products classified in industry 3541 in Current Industrial Reports Series MQ-35W, Metalworking Machinery, was revised for some products between 1963 and 1967. Accordingly, these data may not be directly comparable.



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3541.--MACHINE TOOLS, METAL-CUTTING TYPES					
	Materials, parts, containers, and supplies, total.....		(X)	666.1	(X)	334.0
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	56.6	18.5	37.4	10.5
331012	Sheet and strip.....	..do.....	14.1	3.2	7.7	1.4
331013	Plates.....	..do.....	37.7	7.4	20.0	3.5
331015	Structural shapes.....	..do.....	9.8	3.1	3.6	1.1
331017	Wire and wire products.....	..do.....	(NA)	13.8	(NA)	0.1
331019	All other carbon steel mill shapes and forms.....	..do.....			4.8	1.7
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	..do.....	26.3	13.1	17.6	6.9
331029	All other alloy steel mill shapes and forms.....	..do.....	3.1	3.3	3.5	2.2
331031	Stainless steel.....	..do.....	2.1	1.9	0.5	0.8
	Copper and copper-base alloy:					
335728	Bar wire (for electrical conduction).....	Million lbs.....	(D)	(D)	0.1	0.1
335790	Insulated wire and cable.....	Million lbs. (copper content)	2.0	2.5	1.0	0.8
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	(NA)	0.9	0.4	0.4
335123	Plate, sheet, and strip, including military cups and discs..	..do.....	(NA)	0.4	0.4	0.3
335127	Pipe and tube.....	..do.....	(2)	(2)	0.4	0.3
	Aluminum and aluminum base alloy:					
335202	Sheet, plate and foil.....	..do.....	1.3	1.1	1.1	0.8
335205	Extruded shapes, including extruded rod, bar, tube, etc....	..do.....	0.4	0.4	0.2	0.1
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder welded tubing, etc.).....	..do.....	0.3	0.3	0.1	0.1
331051	Pig iron, excluding silvery iron.....	1,000 short tons.	13.9	0.9	16.8	1.1
999811	Iron and steel scrap (excluding home scrap).....	..do.....	32.2	1.4	21.6	1.0
	Castings (rough and semifinished): <sup>3</sup>					
332011	Iron (gray and malleable).....	..do.....	160.6	76.9	98.5	39.8
332300	Steel.....	..do.....	14.7	11.1	6.6	4.5
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	(NA)	8.2	2.5	2.8
336200	Copper and copper-base alloy.....	..do.....	1.6	1.8	2.1	1.9
339100	Iron and steel forgings <sup>3</sup> .....	1,000 short tons.	8.2	6.6	4.6	3.6
	Electric motors and generators <sup>3</sup> .....					
	Fractional horsepower electric motors (under 1 hp.):					
362110	Timing motors, synchronous and subsynchronous.....	1,000.....	175.8	7.8	12.2	1.2
362115	Other fractional horsepower electric motors.....	..do.....			93.2	3.5
362120	Integral horsepower motors and generators (1 hp. and over)....	..do.....	109.7	21.5	67.2	11.3
	Bearings:					
356218	Ball.....	..do.....	(X)	12.2	(X)	6.5
356201	Roller.....	..do.....	(X)	5.1	(X)	3.9
970099	All other materials and components, parts, containers, and sup- plies consumed.....	..do.....	(X)	341.5	(X)	187.5
976000	Materials, parts, containers, and supplies, n.s.k. <sup>4</sup> .....	..do.....	(X)	111.2	(X)	34.6

(D) Included with material code 970099, "All other materials and components, etc." to avoid disclosing figures for individual companies.

(NA) Not available. (X) Not applicable.

<sup>1</sup>This figure is understated by \$5 million or less because of apparent undercoverage of carbon steel pipe and tube.<sup>2</sup>Included with material code 970099, "All other materials and components, etc." to avoid disclosing figures for individual companies.<sup>3</sup>No data are available for castings, iron and steel forgings, or electric motors and generators produced and consumed in the same establishment except for code 332011, Iron Castings, which totaled 35.1 thousand short tons in 1967 and 33.8 thousand short tons in 1963.<sup>4</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3541, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

**U.S. DEPARTMENT OF COMMERCE**  
**Bureau of the Census**  
Washington, D.C. 20233

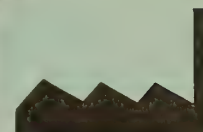
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U.S. DEPARTMENT OF COMMERCE

OFFICIAL BUSINESS





# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

**preliminary  
report**

### Machine tools, metal-forming types

SIC Code 3542

The Machine Tools, Metal-Forming Types Industry includes establishments primarily engaged in manufacturing power driven machines, not supported in the hands of an operator while in use, for pressing, forging, hammering, extruding, shearing, bending or die casting metal into shape. This industry also includes rebuilding such machine tools and manufacturing repair parts for them. Establishments primarily engaged in the manufacture of electric welding equipment are classified in Industry 3623; portable power-driven handtools, gas welding and cutting equipment, and automotive maintenance equipment in industry 3548.

The classification of establishments for which data are tabulated in this report is based upon the

definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Machine Tools, Metal-Forming Types, Industry amounted to \$698.6 million, an increase of 58 percent compared with 1963. Value added by manufacture at \$429.9 million in 1967 was 53 percent more than value added in 1963. Average employment in the industry showed an increase of 31 percent from 1963 to a total of 28.9 thousand employees in 1967.

Of the \$698.6 million total value of shipments and other receipts of establishments classified as metal-forming machine tools, \$84 million were

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)
INDUSTRY 3542.--MACHINE TOOLS, METAL-FORMING TYPES														
1967 Census....	348	167	28.9	247.4	20.7	45.7	163.7	429.9	286.2	698.6	24.7	202.6	87	84
1966 ASM <sup>1</sup> .....	(NA)	(NA)	28.4	244.9	20.9	47.4	164.2	432.1	311.9	727.7	27.6	189.3	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	25.5	205.5	18.5	41.5	138.8	349.0	254.3	582.8	20.5	164.9	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	23.0	180.3	16.7	37.9	121.6	318.5	199.2	504.7	*30.0	138.6	(NA)	(NA)
1963 Census....	366	146	22.1	161.7	15.8	34.6	107.4	281.3	165.4	441.4	10.8	124.2	86	79
1962 ASM <sup>1</sup> .....	(NA)	(NA)	23.4	172.0	18.4	37.0	109.5	265.8	180.7	448.2	*12.7	135.0	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	23.2	158.2	18.3	34.8	101.1	221.7	174.9	413.5	7.7	129.7	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	22.4	152.1	18.0	35.8	100.9	237.6	156.9	384.0	12.6	123.5	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	22.3	146.6	17.9	35.0	94.7	232.0	141.1	357.7	9.7	121.6	(NA)	(NA)
1958 Census <sup>2</sup> ...	291	147	22.5	132.4	15.6	30.9	82.2	176.0	130.1	317.7	11.7	103.7	82	80

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 6 and 3, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued December 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**



products primary to other industries; and \$48 million were receipts for miscellaneous activities. The industry shipments of primary products represented 87 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 86 percent in 1963.

The total value of metal-forming machine tools shipped by all producers in 1967 was \$672.7 million of which \$566 million, or 84 percent, were shipped by plants classified in industry 3542, Machine

Tools, Metal-Forming Types, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 79 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3542, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MQ-35W, Metalworking Machinery.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)						
INDUSTRY 3542.--MACHINE TOOLS, METAL-FORMING TYPES													
United States, Total.....	348	167	28.9	247.4	20.7	45.7	163.7	429.9	286.2	698.6	24.7	22.1	281.3
New England.....	29	17	2.4	21.2	1.6	3.6	11.8	36.5	23.1	57.6	2.1	2.1	23.3
Connecticut.....	20	12	2.1	19.2	1.3	3.1	10.3	33.3	21.3	52.7	2.0	1.8	21.3
Middle Atlantic.....	75	26	5.0	40.0	3.5	7.1	24.6	64.5	37.0	96.4	3.4	4.5	58.6
New York.....	32	11	3.2	25.1	2.2	4.3	15.3	39.2	28.1	62.9	3.0	2.5	33.1
New Jersey.....	23	8	0.4	3.3	0.3	0.6	2.2	4.9	3.6	8.2	(D)	0.5	5.0
Pennsylvania.....	20	7	1.4	11.5	1.0	2.1	7.1	20.4	5.4	25.2	(D)	1.6	20.5
East North Central....	151	79	17.6	157.2	12.8	28.9	107.0	274.7	192.7	458.9	16.4	12.6	166.6
Ohio.....	37	25	7.1	59.8	5.0	11.4	38.8	117.2	76.5	188.7	6.0	3.4	51.6
Indiana.....	10	5	0.4	3.8	0.3	0.7	2.6	7.0	4.5	11.2	(D)	0.3	3.9
Illinois.....	43	26	7.4	69.3	5.5	12.5	49.5	106.3	87.1	191.0	8.2	6.3	78.0
Michigan.....	54	19	2.6	22.4	1.8	4.0	15.0	41.2	23.2	63.6	1.8	2.3	31.6
Wisconsin.....	7	4	0.2	1.9	0.2	0.3	1.1	3.1	1.4	4.4	(D)	0.2	1.5
West North Central....	20	12	1.0	6.2	0.8	1.7	4.5	13.0	8.1	21.1	0.7	0.5	5.8
Minnesota.....	9	6	0.6	3.7	0.4	1.0	2.6	8.4	5.6	14.1	0.6	0.3	3.1
Missouri.....	7	3	0.2	1.3	0.2	0.4	1.0	2.5	1.0	3.4	(D)	0.3	2.8
South.....	23	14	1.0	6.9	0.8	1.7	4.7	12.6	8.8	21.4	0.8	0.6	6.6
South Atlantic.....	12	8	0.8	5.5	0.6	1.3	3.7	10.0	6.9	16.9	0.6	(D)	(D)
West.....	50	19	1.9	15.9	1.4	2.7	11.1	28.6	16.5	43.2	1.4	1.8	20.3
Pacific.....	46	19	1.9	15.9	1.3	2.7	11.1	28.5	16.4	43.0	1.4	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Value of total shipments including interplant transfers (million dollars)	
		1967	1963
3542- --	MACHINE TOOLS, METAL-FORMING TYPES, TOTAL.....	672.7	444.8
35421 00	Punching, shearing, bending, and forming machines:		
	As reported in the census of manufactures <sup>1</sup> .....	127.9	92.5
	As reported on Census Form MQ-35W <sup>1</sup> .....	114.4	88.0
35422 00	Presses, including forging presses:		
	As reported in the census of manufactures <sup>1</sup> .....	261.3	141.7
	As reported on Census Form MQ-35W <sup>1</sup> .....	240.1	136.0
35423 --	Other metal-forming machine tools, including forging machines, total.....	122.9	71.7
	Products included in both the census of manufactures and on Census Forms MQ-35W:		
	As reported in the census of manufactures <sup>1</sup> .....	107.4	66.6
	As reported on Census Form MQ-35W <sup>1</sup> .....	98.8	64.2
35423 97	All other metal-forming machines.....	15.5	5.1
35424 --	Parts for metal-forming machine tools and rebuilt metal-forming machinery, total.....	125.8	118.2
35424 11	Parts for metal-forming machine tools, except parts and attachments for electric and pneumatic power-driven handtools.....	120.8	112.4
35424 75	Rebuilt metal-forming type machine tools.....	5.0	5.8
35420 00	Machine tools, metal-forming types, n.s.k. (For companies with 10 or more employees. See Note.)..	29.9	20.7
35420 02	Machine tools, metal-forming types, n.s.k. (For companies with less than 10 employees. See Note.)	4.9	

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind.

<sup>1</sup>For these products, data were also collected on Quarterly Form MQ-35W, Metalworking Machinery. In lieu of asking for detailed statistics on these products in the census of manufactures, respondents were asked to report only value of shipments for specified classes of products for which separate figures had previously been collected on the quarterly form. In most cases, the value figures reported in the census of manufactures for each class of products agreed closely with the corresponding figures reported in the annual survey. However, there were some differences between the census figures and the quarterly survey figures. These variations were due primarily to the following reasons:

- Use of different reporting periods (calendar quarters vs. fiscal year.)
- Use of different bases for reporting value (company sales vs. factory production.)
- Use of estimates in reporting data on the quarterly survey, whereas census of manufactures figures generally represent more exact shipments figures.

See Current Industrial Reports Series MQ-35W for detailed product data.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3542.--MACHINE TOOLS, METAL-FORMING TYPES					
	Materials, parts, containers, and supplies, total.....		(X)	248.4	(X)	144.1
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	39.5	10.7	23.3	6.2
331012	Sheet and strip.....	..do.....	(NA)	0.9	3.6	1.1
331013	Plates.....	..do.....	137.9	20.9	86.5	13.0
331015	Structural shapes.....	..do.....	6.4	1.2	2.0	0.4
331017	Wire and wire products.....	..do.....	(NA)	0.2	(NA)	0.1
331019	All other carbon steel mill shapes and forms.....	..do.....	10.6	10.3	0.6	0.3
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	..do.....	11.6	5.6	4.0	2.8
331029	All other alloy steel mill shapes and forms.....	..do.....	3.5	1.5	1.8	0.9
331031	Stainless steel.....	..do.....	0.6	0.6	0.6	0.7
	Copper and copper-base alloy:					
335728	Bar wire (for electrical conduction).....	million lbs.....	0.1	0.1	0.3	0.2
335790	Insulated wire and cable.....	million lbs copper content..	0.2	0.2		
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	million lbs.....	0.6	0.6	0.2	0.2
335123	Plate, sheet, and strip, including military cups and discs..	..do.....	(NA)	0.1	0.1	0.1
335127	Pipe and tube.....	..do.....	(2)	(2)	0.1	0.1
	Aluminum and aluminum base alloy:					
335202	Sheet, plate and foil.....	..do.....	0.4	0.4	0.4	0.3
335205	Extruded shapes, including extruded rod, bar, tube, extruded rod, bar, tube, etc.....	..do.....	(NA)	0.8	0.1	0.1
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder welded tubing, etc.).....	..do.....	(NA)	0.1	(NA)	0.1
331051	Pig iron, excluding silvery iron.....	1,000 short tons.	6.3	0.5	4.0	0.3
999811	Iron and steel scrap (excluding home scrap).....	..do.....	20.5	0.9	18.8	0.7
	Castings (rough and semifinished): <sup>3</sup>					
332011	Iron (gray and malleable).....	..do.....	43.5	18.7	23.5	9.7
332300	Steel.....	..do.....	23.9	12.9	9.7	4.9
336100	Aluminum and aluminum-base alloy.....	million lbs.....	1.0	1.1	0.9	0.6
336200	Copper and copper-base alloy.....	..do.....	2.1	2.2	1.7	1.6
339100	Iron and steel forgings <sup>3</sup> .....	1,000 short tons.	10.1	6.9	7.8	4.8
	Electric motors and generators <sup>3</sup>					
	Fractional horsepower electric motors (under 1 hp.):					
362110	Timing motors, synchronous and subsynchronous.....	1,000.....	(NA)	0.4	(NA)	0.2
362115	Other fractional horsepower electric motors.....	..do.....	(NA)	1.4	7.3	0.4
362120	Integral horsepower motors and generators (1 hp. and over)..<	..do.....	27.1	11.4	17.4	5.8
	Bearings:					
356218	Ball.....	.....	(X)	1.5	(X)	0.6
356201	Roller.....	.....	(X)	1.6	(X)	1.3
970099	All other materials and components, parts, containers, and supplies consumed.....	.....	(X)	119.9	(X)	71.3
976000	Materials, parts, containers, and supplies, n.s.k. <sup>4</sup> .....	.....	(X)	24.8	(X)	15.6

(NA) Not available. (X) Not applicable.

<sup>1</sup>These figures are understated by less than \$5 million because of apparent undercoverage of carbon steel pipe and tube.<sup>2</sup>Included with material code 970099, "all other materials and components."<sup>3</sup>Excludes quantities produced and consumed in finished products at the same establishment.<sup>4</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3542, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--** All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--** This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--** This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--** The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--** In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--** The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

**U.S. DEPARTMENT OF COMMERCE**  
**Bureau of the Census**  
Washington, D.C. 20233

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OFFICIAL BUSINESS



# 1967 CENSUS OF MANUFACTURES

MC67(P)-35C-3



INDUSTRY SERIES

**preliminary  
report**

## Special dies, tools, jigs, and fixtures

SIC Code 3544

The Special Dies and Tools, Die Sets, Jigs and Fixtures Industry includes establishments commonly known as contract tool and die shops and primarily engaged in manufacturing, on a job or order basis, special tools and fixtures for use with machine tools, hammers, die casting machines, and presses. The products of establishments classified in this industry include a wide variety of special toolings, such as dies; punches; die sets and components, and sub-presses; jigs and fixtures; and special checking devices. Establishments primarily engaged in manufacturing molds for die casting and foundry casting; metal molds for plaster working, rubber-working, plastic-working, glass-working and similar machinery are also included.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Special Dies, Tools, Jigs, and Fixtures Industry amounted to \$2,151.1 million, an increase of 55 percent compared with 1963. Value added by manufacture at \$1,608.9 million in 1967 was 56 percent more than value added in 1963. Average employment in the industry showed an increase of 23 percent from 1963 to a total of 111.6 thousand employees in 1967.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3544.-SPECIAL DIES, TOOLS, JIGS, AND FIXTURES														
1967 Census....	6,590	1,523	111.6	1,013.1	94.0	213.6	785.6	1,608.9	561.7	2,151.1	113.1	240.2	97	74
1966 ASM <sup>1</sup> .....	(NA)	(NA)	120.3	1,028.3	100.8	231.7	792.6	1,664.5	592.6	2,217.9	133.9	194.0	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	108.5	881.0	90.3	209.3	684.3	1,341.7	514.3	1,839.2	80.5	167.0	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	93.8	741.7	78.7	179.1	581.6	1,180.1	403.1	1,571.3	49.5	134.4	(NA)	(NA)
1963 Census....	5,896	1,133	90.9	682.7	76.0	169.3	543.0	1,029.3	373.3	1,388.8	53.3	124.8	93	72
1962 ASM <sup>1</sup> .....	(NA)	(NA)	101.2	706.6	84.2	184.9	553.0	1,106.6	393.8	1,488.3	*49.2	126.8	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	90.4	605.3	74.3	156.3	460.0	901.5	312.3	1,201.9	*36.8	110.9	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	93.2	638.2	76.8	163.3	491.8	966.5	342.9	1,315.0	*38.3	102.0	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	89.4	597.9	74.2	158.2	465.0	932.0	311.4	1,235.0	*29.1	105.3	(NA)	(NA)
1958 Census <sup>2</sup> ...	5,745	994	83.3	536.6	68.9	139.9	415.2	780.1	275.0	1,060.6	43.2	97.1	93	69

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 4 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director

Of the \$2,151 million total value of shipments and other receipts of establishments classified as special dies, tools, jigs, and fixtures, \$59 million were products primary to other industries; and \$211 million were receipts for miscellaneous activities. The industry shipments of primary products represented 97 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 93 percent in 1963.

The total value of special dies, tools, jigs, and fixtures shipped by all producers in 1967 was \$2,531.2 million of which \$1,881 million, or 74

percent, were shipped by plants classified in industry 3544, Special Dies, Tools, Jigs, and Fixtures, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 72 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.



TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967										1963		
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3544.-SPECIAL DIES, TOOLS, JIGS, AND FIXTURES													
Unites States, total.....	6,590	1,523	111.6	1,013.1	94.0	213.6	785.6	1,608.9	561.7	2,151.1	113.1	90.9	1,029.3
New England.....	712	154	9.0	73.0	7.7	16.7	55.2	120.3	40.8	159.8	8.9	7.8	74.8
Rhode Island.....	51	5	0.4	2.5	0.3	0.6	1.9	3.9	1.4	5.2	0.2	0.4	3.0
Connecticut.....	350	73	4.3	36.4	3.6	8.0	27.3	61.8	20.0	81.2	5.3	3.7	36.6
Middle Atlantic.....	1,337	251	18.1	146.1	15.3	36.4	111.2	238.5	82.1	317.7	18.3	15.4	153.2
New York.....	570	97	6.6	52.3	5.6	15.0	39.3	83.6	26.7	110.1	3.9	5.9	59.5
New Jersey.....	406	80	5.8	48.5	5.0	11.1	37.5	78.5	29.2	106.8	5.5	4.8	49.4
Pennsylvania.....	361	74	5.7	45.3	4.7	10.4	34.4	76.4	26.3	100.9	8.9	4.7	44.3
East North Central....	3,245	874	67.7	655.7	56.8	129.2	512.6	1,015.5	350.8	1,353.5	68.5	54.9	663.1
Ohio.....	722	211	15.0	139.0	12.7	29.5	108.2	218.8	69.5	285.2	16.1	12.6	144.2
Indiana.....	347	92	6.7	59.5	5.5	12.3	45.1	89.1	32.4	120.2	6.1	5.3	54.8
Illinois.....	707	135	10.6	96.1	8.9	19.5	73.9	158.6	54.6	210.1	11.9	7.7	91.9
Michigan.....	1,249	394	31.3	324.0	26.4	60.4	256.3	500.0	178.5	673.4	32.0	25.7	338.6
Wisconsin.....	220	42	4.1	37.2	3.4	7.5	29.2	49.0	15.9	64.5	2.5	3.6	33.7
West North Central....	293	60	4.2	35.4	3.6	8.0	27.4	59.3	23.2	81.7	4.3	3.1	30.3
Minnesota.....	84	18	1.2	10.3	1.0	2.2	7.8	17.2	8.7	25.5	1.7	0.8	7.3
Iowa.....	43	9	0.8	7.3	0.7	1.6	5.9	11.4	3.4	14.6	0.8	0.6	5.7
Missouri.....	131	28	1.9	15.1	1.6	3.5	11.5	24.5	9.7	34.0	1.5	(D)	(D)
Kansas.....	24	4	0.3	1.9	0.2	0.5	1.6	4.9	0.9	5.9	0.3	0.2	1.1
South Atlantic.....	204	44	2.8	20.2	2.4	5.2	15.3	31.9	12.4	44.2	2.6	1.7	16.0
Maryland.....	27	2	0.3	2.0	0.3	0.6	1.5	3.2	2.0	5.2	0.3	0.1	1.7
Georgia.....	33	8	0.5	3.7	0.4	0.9	2.9	5.5	1.8	7.3	0.4	0.4	4.2
Florida.....	72	18	1.0	7.1	0.8	1.9	5.4	12.3	4.2	16.4	1.0	0.7	6.4
East South Central....	103	26	1.6	11.6	1.4	3.0	8.8	22.7	6.3	28.8	2.4	1.0	8.2
Kentucky.....	32	7	0.4	3.0	0.3	0.7	2.4	5.3	1.7	6.8	0.5	0.3	2.6
Tennessee.....	56	16	1.0	6.7	0.8	1.8	5.0	14.3	4.0	18.2	1.4	0.5	4.1
West South Central....	107	17	1.1	7.7	0.9	2.0	5.9	14.6	7.2	21.7	1.2	0.8	7.3
Texas.....	73	10	0.8	5.8	0.7	1.4	4.4	11.2	5.1	16.2	0.8	0.6	4.7
Mountain.....	46	10	0.5	4.0	0.5	1.0	3.2	6.5	1.7	8.2	0.7	0.4	4.8
Colorado.....	19	2	0.1	1.2	0.1	0.2	0.8	2.0	0.6	2.6	(D)	(D)	(D)
Arizona.....	21	5	0.3	2.5	0.3	0.6	2.1	4.0	1.0	5.0	0.3	0.2	1.8
Pacific.....	543	87	6.5	59.4	5.3	12.1	46.0	99.6	37.1	135.5	6.1	5.8	71.8
Washington.....	13	-	0.1	0.8	0.1	0.2	0.6	1.4	0.5	1.9	(D)	(D)	(D)
Oregon.....	19	-	0.1	0.5	0.1	0.1	0.4	0.9	0.5	1.4	(D)	(D)	(D)
California.....	511	87	6.3	58.2	5.2	11.8	45.0	97.3	36.1	132.3	5.8	5.7	70.8

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

- Represents zero.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Code	Product	Total shipments, including interplant transfers		
		1967		1963
		Quantity (million lbs.)	Value (million dollars)	Value (million dollars)
3544- --	SPECIAL DIES, TOOLS, JIGS, AND FIXTURES, TOTAL.....	(X)	2,531.2	1,608.1
35441 --	Special dies and tools, die sets, jigs and fixtures, total.....	(X)	<sup>1</sup> 1,715.0	<sup>1</sup> 1,161.2
	Jigs and fixtures, all types:			
	Gauging and checking types:			
35441 13	Under 1,000 pounds weight.....			
35441 15	1,000 pounds weight and over.....			
	All other jigs and fixtures (holding, positioning, layout, assembly, etc.):			
35441 17	Under 1,000 pounds weight.....	(NA)	638.5	230.9
35441 18	1,000 pounds weight and over.....			
35441 19	Standard catalog components and parts for jigs and fixtures, including drill bushings.....	(X)	31.2	( <sup>2</sup> )
	Dies:			
	Forging dies, including cold forging and heading:			
35441 33	Open die type.....	(X)	22.1	35.6
35441 35	Closed die type.....	(X)	24.6	
	Standard and special components and parts for dies:			
35441 73	Die sets.....	(X)	38.5	<sup>2</sup> 46.6
35441 79	Other, including standard punches, springs, etc.....	(X)	21.0	
	Forming and drawing dies, including press brake dies:			
35441 23	Under 500 pounds weight.....	(NA)	57.2	763.5
35441 25	501 to 3,000 pounds weight.....	20.7	38.1	
35441 27	Over 3,000 pounds weight.....	49.7	97.0	
	Stamping dies, including lamination and blanking dies:			
35441 28	Progressive type dies.....	(X)	187.2	763.5
35441 29	All other stamping type dies (punch, trim, notch, pierce, perforate, etc.)....	(X)	190.8	
35441 41	Extrusion and wiredrawing and straightening dies.....	(X)	20.5	84.6
35441 49	All other dies.....	(X)	44.1	
35441 98	Other specially designed tooling, prototypes, and models.....			
35441 00	Special dies and tools, die sets, jigs and fixtures, n.s.k.....	(X)	304.2	84.6
35442 --	Industrial molds, total <sup>3</sup> .....	(X)	<sup>1</sup> 446.8	<sup>1</sup> 311.1
	Industrial molds, made of metal:			
	For casting metals:			
35442 11	Diecasting dies (molds).....	(X)	<sup>1</sup> 100.1	<sup>1</sup> 90.5
35442 13	Foundry molds, except ingot molds.....	(X)	8.7	15.2
35442 33	For molding rubber products, including tire molds.....	(X)	40.7	35.5
	For molding plastics:			
35442 51	Injection molds.....	(X)	168.4	112.7
35442 55	Compression molds, including matched metal molds.....	(X)	24.3	
35442 59	All other molds, including transfer, plunger, and rotational molds.....	(X)	18.1	
35442 61	All other molds made of metal (including molds for glass and other materials) and mold bases.....	(X)	42.0	30.3
35442 63	Industrial molds, made of materials other than metal.....	(X)	10.2	6.1
35442 00	Industrial molds, n.s.k.....	(X)	34.3	20.8
35440 00	Special dies, Tools, Jigs, and Fixtures, n.s.k. (For establishments with 10 or more employees. See Note.).....	(X)	264.7	135.9
35440 02	Special dies, Tools, Jigs, and Fixtures, n.s.k. (For establishment with less than 10 employees. See Note.).....	(X)	104.7	

(NA) Not Available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>The definitions of product classes 35441 and 35442 have been revised. Product code 35442 11, diecasting dies(molds), was included through 1966 in product class 35441 but is now included in product class 35442.<sup>2</sup>1963 data for product code 35441 19, standard catalog components and parts for jigs and fixtures are included with product codes 35441 73 and 35441 79, standard catalog components and parts for dies.<sup>3</sup>Excludes industrial molds produced and consumed in the same establishment.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3544.-SPECIAL DIES, TOOLS, JIGS, AND FIXTURES					
	Materials, parts, containers, and supplies, total.....		(X)	420.8	(X)	281.5
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bar and bar shapes.....	1,000 short tons.	62.1	30.3	64.3	21.9
331012	Sheet and strip.....	..do.....	42.2	10.5	45.0	7.9
331013	Plates.....	..do.....	88.4	19.5	66.2	14.3
331015	Structural shapes.....	..do.....	10.3	2.9	6.1	1.7
331017	Wire and wire products.....	..do.....	(NA)	0.8	0.4	0.3
331019	All other carbon steel mill shapes and forms.....	..do.....	5.4	3.5	8.7	3.5
	Alloy steel (except stainless):					
331021	Bar and bar shapes.....	..do.....	(NA)	24.1	16.0	19.4
331029	All other alloy steel mill shapes and forms.....	..do.....	5.1	4.5	7.8	5.3
331031	Stainless steel.....	..do.....	2.4	3.4	1.8	2.3
	Copper and copper-base alloy:					
335728	Bar wire (for electrical conduction).....	Million lbs.....	0.6	0.5	} (NA)	0.2
335790	Insulated wire and cable.....	Million lbs. (copper content)	(NA)	0.1		
335102	Rod, bar, and mechanical wire.....	Million lbs.....	1.1	0.9	1.0	1.1
335123	Plate, sheet, and strip, including cups and discs.....	..do.....	1.6	1.5	0.7	0.7
335127	Pipe and tube.....	..do.....	(NA)	0.7	0.2	0.2
	Aluminum and aluminum base alloy:					
335202	Sheet, plate, and foil.....	..do.....	5.8	4.3	2.3	1.7
335205	Extruded shapes, including rod, bar, pipe, tube, etc.....	..do.....	2.6	1.4	1.5	1.0
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, tubing, etc.).....	..do.....	1.8	0.6	1.0	0.5
339915	Metal Powders.....	..do.....	0.2	0.7	( <sup>1</sup> )	( <sup>1</sup> )
331051	Pig iron, excluding silvery iron.....	1,000 short tons.	1.7	0.1	1.3	0.1
999811	Iron and steel scrap (excluding home scrap).....	..do.....	(D)	(D)	16.3	0.5
	Castings (rough and semifinished): <sup>2</sup>					
332011	Iron (gray and malleable).....	..do.....	33.2	12.2	40.3	12.9
332300	Steel.....	..do.....	17.1	10.4	7.7	4.8
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	3.9	3.3	3.2	1.9
336200	Copper and copper-base alloy.....	..do.....	3.3	4.0	0.8	0.7
339100	Iron and steel forgings <sup>2</sup> .....	1,000 short tons.	4.1	3.7	1.1	1.2
	Electric motors and generators: <sup>2</sup>					
	Fractional horsepower electric motors (under 1 hp.):					
362110	Timing motors, synchronous and subsynchronous.....	1,000.....	4.6	0.2	3.3	0.1
362115	Other fractional horsepower electric motors.....	..do.....	4.0	0.3	2.3	0.1
362120	Integral horsepower motors and generators (1 hp. and over)...	..do.....	1.7	0.3	1.5	0.5
	Bearings:					
356218	Ball.....	..do.....	(X)	0.5	(X)	0.4
356201	Roller.....	..do.....	(X)	0.3	(X)	0.6
970099	All other materials and components, parts, containers, and supplies consumer.....	..do.....	(X)	106.1	(X)	<sup>1</sup> 85.9
976000	Materials, parts, containers, and supplies, n.s.k. <sup>3</sup> .....	..do.....	(X)	168.1	(X)	89.0

(D) Included with material code 970099, "All other materials, etc." to avoid disclosing figures for individual companies.

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>The 1963 data for material code 339915, metal powders are included with code 970099, "All other materials, etc."<sup>2</sup>No data are available on the quantities of castings, iron and steel forgings, or electric motors and generators produced and consumed in the same establishment.<sup>3</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3544, these small establishments accounted for approximately 4 percent of payrolls and 5 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.

# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products**--In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture**--This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment**--For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

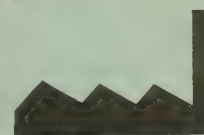
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories**--Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-35C-4

## INDUSTRY SERIES

### Machine tool accessories

**preliminary  
report**

SIC Code 3545

The Machine Tool Accessories and Measuring Devices Industry includes establishments primarily engaged in manufacturing cutting tools, machinists precision measuring tools, and attachments and accessories for machine tools and for other metalworking machinery, not elsewhere classified. Establishments primarily engaged in manufacturing handtools except power driven are classified in Group 342.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Machine Tool Accessories Industry

amounted to \$1,300.2 million, an increase of 65 percent compared with 1963. Value added by manufacture at 916.7 million in 1967 was 64 percent more than value added in 1963. Average employment in the industry showed an increase of 28 percent from 1963 to a total of 59.8 thousand employees in 1967.

Of the \$1,300.2 million total value of shipments and other receipts of establishments classified as machine tool accessories, \$180 million were products primary to other industries; and \$92 million were receipts for miscellaneous activities. The industry shipments of primary products represented 85 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 83 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3545. --MACHINE TOOL ACCESSORIES														
1967 Census....	1,134	426	59.8	475.7	44.8	95.5	321.8	916.7	413.2	1,300.2	54.7	272.1	85	86
1966 ASM <sup>1</sup> .....	(NA)	(NA)	55.9	429.6	40.9	91.3	287.0	883.3	363.6	1,230.3	53.1	231.8	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	51.9	375.6	37.9	81.8	248.2	732.6	292.6	1,030.7	38.5	201.5	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	49.2	339.4	35.8	75.9	224.0	615.1	266.0	866.5	29.2	186.7	(NA)	(NA)
1963 Census....	1,038	347	47.0	312.8	34.6	72.0	208.1	559.3	234.5	787.3	22.8	171.1	83	84
1962 ASM <sup>1</sup> .....	(NA)	(NA)	48.7	316.1	35.7	75.1	205.4	570.1	244.6	809.3	22.2	168.3	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	45.0	273.9	32.3	66.3	172.4	474.1	195.5	667.1	17.7	158.9	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	46.7	283.6	34.0	71.5	182.7	495.6	179.2	682.1	18.0	160.5	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	45.1	266.9	33.3	68.3	174.8	458.3	182.4	634.5	15.4	155.7	(NA)	(NA)
1958 Census <sup>2</sup> ...	905	297	41.5	226.9	29.3	56.3	143.7	348.6	143.1	511.5	15.3	147.1	85	85

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued November 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

Harold C. Passer, Assistant Secretary for Economic Affairs

BUREAU OF THE CENSUS George Hay Brown, Director

The total value of machine tool accessories shipped by all producers in 1967 was \$1,200.3 million of which \$1,028 million, or 86 percent, were shipped by plants classified in industry 3545, Machine Tool Accessories, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 84 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers†			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3545. --MACHINE TOOL ACCESSORIES													
United States, total.....	1,134	426	59.8	475.7	44.8	95.5	321.8	916.7	413.2	1,300.2	54.7	47.0	559.3
New England.....	187	67	12.7	93.5	9.3	19.7	63.5	182.5	63.3	241.1	10.1	12.9	135.6
New Hampshire.....	9	6	0.4	2.7	0.3	0.6	1.5	4.5	2.4	6.7	0.4	(b)	(b)
Vermont.....	5	4	1.0	6.7	0.7	1.5	4.7	11.9	8.6	20.9	0.8	0.7	9.0
Massachusetts.....	64	27	7.0	52.3	5.2	11.2	37.8	103.4	32.2	132.0	5.4	6.3	63.1
Connecticut.....	87	23	3.0	22.2	2.2	4.4	14.0	45.2	15.0	58.9	2.2	4.6	49.8
Middle Atlantic.....	175	59	7.9	56.2	5.7	11.7	36.7	107.6	86.9	188.1	8.7	5.7	57.4
New York.....	79	25	1.9	14.3	1.5	3.0	9.4	25.3	11.1	36.0	1.7	1.7	15.9
New Jersey.....	49	13	1.3	9.9	0.9	1.8	6.0	20.7	20.3	38.4	2.1	0.6	6.3
Pennsylvania.....	47	21	4.7	32.1	3.4	6.9	21.2	61.6	55.6	113.8	4.9	3.3	35.3
East North Central...	572	247	33.4	285.0	25.0	54.3	192.4	543.2	224.7	754.4	29.1	24.8	325.5
Ohio.....	107	52	8.6	71.0	6.5	14.4	49.0	139.9	47.8	188.0	7.1	6.4	82.9
Indiana.....	29	10	0.8	5.6	0.6	1.2	3.9	10.2	3.5	13.5	0.2	0.6	6.6
Illinois.....	94	40	6.5	50.6	4.7	10.1	32.4	87.2	52.0	137.1	4.6	5.0	61.3
Michigan.....	312	133	16.7	152.4	12.6	27.6	103.5	293.9	116.2	398.8	16.4	12.3	169.7
Wisconsin.....	30	12	0.7	5.4	0.5	1.1	3.5	12.0	5.2	17.0	0.8	0.4	5.1
West North Central...	23	7	1.6	11.2	1.3	2.6	7.5	23.2	7.4	28.9	1.6	1.1	11.4
South.....	57	19	2.2	12.4	1.9	3.9	9.4	26.6	15.9	39.7	3.2	1.2	12.5
South Atlantic.....	25	9	0.6	3.6	0.5	1.0	2.8	8.8	4.5	12.6	1.1	0.4	3.6
Texas.....	12	-	0.1	0.5	0.1	0.1	0.4	1.0	0.4	1.4	0.1	(b)	(b)
Pacific.....	116	27	2.1	17.3	1.6	3.2	12.3	33.4	14.9	47.6	(b)	1.3	16.5

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Value of Shipments by All Producers: 1967 and 1963

(Includes value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers (million dollars)	
		1967	1963
3545- --	MACHINE TOOL ACCESSORIES, TOTAL.....	1,200.3	731.7
35451 --	Small cutting tools for machine tools and metalworking machinery, total.....	767.8	464.4
	Broaches (excluding holders and burnishing bars):		
35451 13	High-speed steel.....	37.3	19.7
35451 15	Carbide, or special cast alloy, etc.....	8.5	5.0
	Twist drills (excluding combined drills, countersinks and gun drills): <sup>1</sup>		
35451 21	Carbon steel.....	3.5	2.8
	High-speed steel:		
35451 22	Taper shank.....	20.3	20.5
35451 23	Straight shank.....	81.0	52.3
35451 24	Carbide, solid and tipped (excluding tips and blanks sold separately; excluding masonry drills).....	18.1	7.0
35451 25	Gun drills and gun reamers.....	5.4	( <sup>2</sup> )
35451 26	Combination drills and countersinks.....	4.5	( <sup>1</sup> )
35451 27	Countersinks (including port cutters, etc., but excluding combined drills and countersinks and pilots for interchangeable pilot types).....	4.2	2.8
35451 29	Counter bores (including spotfacers, etc., but excluding pilots for interchangeable pilot types)	10.9	6.5
	Reamers, all types (excluding gunreamers):		
35451 31	Carbon steel (including blades sold separately).....	3.0	2.9
35451 33	High-speed steel (including blades sold separately).....	17.9	15.4
35451 36	Carbide, solid and tipped (excluding tips and blanks sold separately; including replaceable blades sold separately).....	7.8	5.6
	Hobs:		
35451 41	Unground.....	9.0	7.4
35451 45	Ground.....	7.8	5.2
35451 46	Gear shaper cutters.....	7.5	6.6
35451 48	Gear shaving cutters.....	4.6	4.9
	Milling cutters:		
	End mills (excluding all inserted blade types, and steel mills but including solid or of bonded blade type, fishtail, die sinking, contour, router, tracer, hollow mills, etc.):		
35451 51	High-speed steel.....	<sup>3</sup> 43.0	<sup>3</sup> 21.2
35451 52	Carbide, solid and tipped (excluding tips and blanks sold separately).....	<sup>3</sup> 6.1	<sup>3</sup> 4.2
	Replaceable inserted blade cutters, all types:		
	Nonindexible type:		
35451 53	High-speed steel, including complete cutters and replaceable blades sold separately.....	5.7	8.2
35451 54	Carbide, including complete cutters and replaceable blades sold separately.....	9.7	
	Indexible insert type:		
35451 55	High-speed steel, including complete cutters and indexible inserts sold separately.....	4.1	10.3
35451 56	Carbide, including complete cutters and indexible inserts sold separately.....	5.5	
35451 58	Form relieved cutters, including high-speed steel and carbide (solid and tipped).....	11.3	5.7
35451 59	Slitting saws and screw slotting cutters, including high-speed steel and carbide (tipped and solids).....	8.5	
	Milling cutters, n.e.c.:		
35451 61	High-speed steel.....	<sup>3</sup> 12.4	<sup>3</sup> 8.7
35451 63	Carbide, solid and tipped (excluding tips and blanks sold separately).....	<sup>3</sup> 6.9	<sup>3</sup> 3.8
	Threading tools:		
	Taps (excluding taps in threading sets and screw plates and inserted chaser types):		
35451 78	Ground thread (high-speed steel).....	59.1	42.7
35451 79	Cut thread (carbon steel and high-speed steel).....	5.7	
35451 73	Dies, threading, including carbon steel, high-speed steel, and carbide (excluding dies in threading sets or screw plates, and inserted chaser types).....	8.5	10.9
35451 75	Chasers and blades for both taps or dies of inserted blade or chaser type, including high-speed steel and carbide (excluding the die heads and insert or collapsible tap bodies).....	17.0	14.3
35451 87	Thread rolling dies, including circular, flat, and planetary.....	11.0	4.3
35451 89	Other threading tools, including screw plates and threading sets.....	5.0	
	Single-point tools: <sup>4</sup>		
35451 65	High-speed steel.....	13.8	11.1
35451 66	Carbide including solid (excluding rough blanks), and tipped (excluding tips and blanks sold separately).....	26.8	24.1
35451 68	Other materials.....	14.5	2.8
35451 72	Circular form tools (including blanks).....	16.5	5.1
	Blanks, tips, and inserts: <sup>5</sup>		
35451 81	Blanks and tips including carbide, cast alloy, and ceramic.....	56.0	23.0
	Inserts, indexible type:		
	Carbide:		
35451 82	Utility ground.....	31.3	35.6
35451 83	Precision ground.....	38.6	
35451 84	Other than carbide.....	1.8	8.7
35451 85	Inserts, other than indexible (on end, specials, etc.):	8.7	
35451 86	Carbide.....	1.0	
	Other than carbide.....		

See footnotes at end of table.



TABLE 3. Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers (million dollars)	
		1967	1963
3545- --	MACHINE TOOL ACCESSORIES--Continued		
35451 --	Small cutting tools for machine tools and metalworking machinery--Continued		
	Other types of cutting tools for machine tools, n.e.c. including rotary burs and rotary files and spade drills: <sup>2</sup>		
35451 92	Carbon steel.....	6.4	5.5
35451 94	High-speed steel.....	26.3	20.8
35451 96	Carbide, solid and tipped (excluding tips and blanks sold separately).....	25.6	20.1
35451 00	Small cutting tools for machine tools and metalworking machinery, n.s.k.....	29.7	17.3
35452 --	Precision measuring tools.....	127.5	88.0
	Machinists' precision tools:		
35452 11	Comparators.....	16.1	8.8
	Fixed size limit gages (American Gage Design type—C58-61):		
35452 13	Fixture type.....	8.9	7.0
35452 15	Thread type.....	9.9	6.0
35452 17	Adjustable size limit gages.....	4.6	2.8
35452 21	Gage blocks.....	4.0	2.6
35452 61	Dial indicators.....	9.9	6.6
35452 65	Micrometers and calipers.....	9.4	( <sup>6</sup> )
35452 71	Pneumatic gages (manual and automatic).....	23.3	14.5
35452 98	Other machinists' precision tools, including dividers.....	32.7	<sup>6</sup> 36.8
35452 00	Precision measuring tools, n.s.k.....	8.7	3.0
35453 --	Other attachments and accessories for machine tools and metalworking machinery, total.....	224.7	152.6
	Chucks:		
35453 11	Drill.....	7.7	7.5
35453 13	Lathe.....	29.3	10.0
35453 15	Other chucks, including die heads and tap bodies.....	6.9	4.0
35453 21	Chuck holding devices (feeding fingers and collets, sleeves, sockets, drill heads, etc.).....	23.9	16.6
35453 31	Tools for screw and automatic machines (box tools, hollow drills, work and tool holders, etc.) except tap and dies.....	20.6	10.0
35453 41	Other accessories and attachments for machine tools and metalworking machinery, except cutting tools.....	110.3	84.7
35453 51	Toolroom specialties, including levels, angle irons, plates, squares, sine bars, V-blocks, flats, vises, etc.....	15.6	11.8
35453 00	Other attachments and accessories for machine tools and metalworking machinery, n.s.k.....	10.4	7.2
35450 00	Machine tool accessories, n.s.k. (For companies with 10 or more employees. See Note.).....	60.7	26.7
35450 02	Machine tool accessories, n.s.k. (For companies with less than 10 employees. See Note.).....	19.6	

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind.

<sup>1</sup>For 1963 "combination drills and countersinks" were included with "twist drills".

<sup>2</sup>For 1963 "gun drills and gun reamers" were included with "other types of metal cutting tools."

<sup>3</sup>Not directly comparable. For 1967, shell mills are included with "milling cutters, n.e.c." For 1963, they were included with "end mills."

<sup>4</sup>Single point tools are cutting tools with integral or bonded shank and cutting element; either square, rectangular, round or other cross section; single or double end; used for turning, planing, drilling, boring, shaping, shaving, forming, threading, cutting off, trepanning, etc.; excludes circular form tools, and all mechanical holding devices and indexable inserts).

<sup>5</sup>Blanks are unground material, as cast or formed from which a solid tool or cutting tip can be made. Tips are a finished or semifinished form of blank to be brazed, soldered or otherwise bonded to a shank to form a cutting tool. Inserts are replaceable, mechanically held cutting components of cutting tools, ground on all surfaces (precision ground); or top and bottom only (utility ground). (Includes only those items sold separately.)

<sup>6</sup>For 1963, code 3545265 "micrometers and calipers" was included with code 35452 98 "other machinists' precision tools."

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3545.--MACHINE TOOL ACCESSORIES					
	Materials, parts, containers, and supplies, total.....		(X)	333.6	(X)	188.6
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bar and bar shapes.....	1,000 short tons..	31.0	10.8	32.9	9.0
331012	Sheet and strip.....	..do.....	8.4	2.0	1.8	0.6
331013	Plates.....	..do.....	5.1	1.5	2.1	0.7
331015	Structural shapes.....	..do.....	2.4	0.7	0.9	0.3
331017	Wire and wire products.....	..do.....	0.9	0.5	0.5	0.2
331019	All other carbon steel mill shapes and forms.....	..do.....	3.4	1.8	3.0	1.3
	Alloy steel (except stainless):					
331021	Bar and bar shapes.....	..do.....	21.7	44.1	15.0	28.7
331029	All other alloy steel mill shapes and forms.....	..do.....	3.5	5.1	5.2	8.0
331031	Stainless steel.....	..do.....	0.8	1.4	0.1	0.2
	Copper and copper-base alloy:					
335728	Bar wire (for electrical conduction).....	Million lbs.....	(NA)	0.1	(Z)	0.1
335790	Insulated wire and cable.....	..do.....	(NA)	0.2		
335102	Rod, bar, and mechanical wire.....	Million lbs.....	0.6	0.9		
335123	Plate, sheet, and strip, including cups and discs.....	..do.....	(NA)	0.2		
335127	Pipe and tube.....	..do.....	(NA)	0.3	0.3	0.3
	Aluminum and aluminum base alloy:					
335202	Sheet, plate, and foil.....	..do.....	0.3	0.2	0.3	0.1
335205	Extruded shapes, including rod, bar, pipe, tube, etc.....	..do.....	0.2	0.2	1.4	1.1
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, tubing, etc.).....	..do.....	0.1	0.1		
339915	Metal powders.....	..do.....	(D)	(D)	(NA)	(NA)
331051	Pig iron, excluding silvery iron.....	1,000 short tons..	(Z)	(Z)	(NA)	(NA)
999811	Iron and steel scrap (excluding home scrap).....	..do.....	(Z)	(Z)	(NA)	(NA)
	Castings (rough and semifinished): <sup>1</sup>					
332011	Iron (gray and malleable).....	..do.....	12.8	5.6	12.9	5.6
332300	Steel.....	..do.....	4.0	4.2	0.6	0.6
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	0.6	0.7	0.8	0.8
336200	Copper and copper-base alloy.....	..do.....	0.1	0.2	0.1	0.1
339100	Iron and steel forgings <sup>1</sup> .....	1,000 short tons..	4.7	3.8	1.3	1.3
	Electric motors and generators: <sup>1</sup>					
	Fractional horsepower electric motors (under 1 hp.):					
362110	Timing motors, synchronous and subsynchronous.....	1,000.....	(D)	(D)	(D)	(D)
362115	Other fractional horsepower electric motors.....	..do.....	6.1	0.3	13.0	0.4
362120	Integral horsepower motors and generators (1 hp. and over)....	..do.....	(NA)	1.3	4.4	1.1
	Bearings:					
356218	Ball.....	..do.....	(X)	0.6	(X)	0.8
356201	Roller.....	..do.....	(X)	0.2	(X)	0.2
970099	All other materials and components, parts, containers, and supplies consumed.....	..do.....	(X)	171.4	(X)	98.3
976000	Materials, parts, containers, and supplies, n.s.k <sup>2</sup> .....	..do.....	(X)	75.2	(X)	28.8

(D) Included with code 970099 "All other materials and components, etc." to avoid disclosing figures for individual companies. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable. (Z) Less than 0.1 when rounded.

<sup>1</sup>No data are available on the quantities of castings, iron and steel forgings or electric motors and generators produced and consumed in the same establishment.

<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3545, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

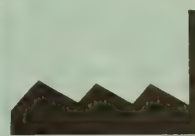
the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



1967 CENSUS OF  
MANUFACTURES

MC67(P)-35C-5

## INDUSTRY SERIES

preliminary  
reportMetalworking machinery, n.e.c.  
SIC Code 3548

The Metalworking Machinery, Except Machine Tools; and Power-Driven Handtools, Industry includes establishments primarily engaged in manufacturing metalworking machinery such as rolling mill machinery and equipment, welding equipment, wire fabricating machinery and equipment, except wire drawing dies, and automotive maintenance machinery and equipment. This industry also includes establishments primarily engaged in manufacturing power-driven handtools for all applications. Establishments primarily engaged in manufacturing machine tools, metal-cutting types, are classified in industry 3541, and those primarily engaged in manufacturing machine tools, metal-forming types, in industry 3542.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Metalworking Machinery, N.E.C., Industry amounted to \$1,164.6 million, an increase of 46 percent compared with 1963. Value added by manufacture at \$699.8 million in 1967 was 50 percent more than value added in 1963. Average employment in the industry showed an increase of 24 percent from 1963 to a total of 47.0 thousand employees in 1967.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3548.--METALWORKING MACHINERY, N.E.C.														
1967 Census....	433	187	47.0	339.9	34.2	69.8	220.3	699.8	481.7	1,164.6	46.8	336.3	85	88
1966 ASM <sup>1</sup> .....	(NA)	(NA)	46.0	339.4	34.3	72.6	227.8	685.0	486.8	1,148.0	49.4	314.1	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	43.3	305.8	31.9	66.2	201.4	620.2	428.0	1,010.1	31.3	287.7	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	41.4	284.9	30.5	64.2	190.0	575.7	371.2	924.2	25.2	240.2	(NA)	(NA)
1963 Census....	435	168	38.0	246.2	28.3	57.1	161.8	468.4	328.4	796.3	21.0	216.4	85	88
1962 ASM <sup>1</sup> .....	(NA)	(NA)	36.0	223.7	26.3	52.5	145.8	429.3	271.0	680.7	11.1	187.5	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	34.9	209.8	25.0	49.0	134.8	368.4	267.6	661.7	14.2	159.8	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	36.2	215.8	26.1	52.4	141.5	409.7	267.2	656.6	18.4	180.6	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	34.8	197.7	25.0	49.6	127.1	362.1	239.3	610.9	11.1	153.4	(NA)	(NA)
1958 Census <sup>2</sup> ...	362	143	33.3	183.3	24.4	46.9	120.4	332.4	241.2	602.0	16.6	157.5	91	85

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 4 and 2 percent, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director



Of the \$1,164.6 million total value of shipments and other receipts of establishments classified as metalworking machinery, n.e.c., \$155 million were products primary to other industries; and \$110 million were receipts for miscellaneous activities. The industry shipments of primary products represented 85 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was also 85 percent in 1963.

The total value of metalworking machinery, n.e.c., shipped by all producers in 1967 was \$1,024.7 million of which \$900 million, or 88

percent, were shipped by plants classified in industry 3548, Metalworking Machinery, N.E.C., while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was also 88 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3548, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MQ-35W, Metalworking Machinery.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967										1963		
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3548.--METALWORKING MACHINERY, N.E.C.													
United States, total.....	433	187	47.0	339.9	34.2	69.8	220.3	699.8	481.7	1,164.6	46.8	38.0	468.4
New England.....	43	21	4.4	31.7	2.7	5.6	17.2	68.8	35.2	103.5	4.0	2.8	32.9
Connecticut.....	18	9	1.0	7.7	0.7	1.4	4.4	15.2	11.3	26.7	0.6	1.3	17.3
Middle Atlantic.....	89	45	14.9	112.5	11.1	22.7	77.3	234.9	152.1	385.5	12.9	11.5	141.3
New York.....	32	10	3.5	24.3	2.4	4.8	15.6	59.8	28.2	87.0	3.3	2.5	37.7
New Jersey.....	17	9	2.2	16.9	1.5	3.3	10.8	30.9	23.3	54.7	0.8	1.7	17.4
Pennsylvania.....	40	26	9.3	71.3	7.1	14.6	50.9	144.2	100.6	243.7	8.8	7.3	86.2
East North Central....	158	76	17.3	130.9	12.5	25.9	82.3	249.9	205.4	449.4	19.2	15.1	190.1
Ohio.....	51	28	8.9	72.7	6.5	13.7	47.9	131.4	125.1	257.8	10.4	7.8	96.2
Illinois.....	42	22	5.4	35.1	3.9	7.9	21.0	71.9	51.0	117.1	5.9	4.7	57.8
Michigan.....	41	16	1.5	10.5	1.1	8.0	6.8	22.8	11.7	33.4	1.0	1.4	19.0
West North Central....	35	14	2.3	16.2	1.5	3.2	9.0	33.2	20.3	52.1	2.4	2.0	22.8
Iowa.....	11	5	1.2	9.1	0.7	1.5	4.9	17.9	8.1	25.0	1.3	1.1	11.9
South.....	43	15	6.7	38.5	5.4	10.2	27.9	89.2	57.8	141.7	5.5	5.5	67.5
South Atlantic.....	25	11	6.0	34.1	4.8	9.3	25.3	77.8	50.8	123.5	5.1	(D)	(D)
West.....	65	16	1.4	10.1	1.0	2.0	6.6	23.8	10.9	32.5	2.7	1.1	14.0
Pacific.....	59	15	1.3	9.7	1.0	1.9	6.3	22.9	10.2	30.9	2.6	(D)	(D)
California.....	54	13	1.2	9.0	0.9	1.8	5.7	21.6	9.0	28.4	2.6	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000 of units)	Value (million dollars)	Quantity (1,000 of units)	Value (million dollars)
3548- --	METALWORKING MACHINERY, N.E.C., TOTAL.....	(X)	1,024.7	(X)	701.9
35481 --	Rolling mill machinery and equipment, total.....	(X)	332.9	(X)	222.2
	Hot rolling mill machinery, except tube rolling:				
35481 11	Blooming and slabbing mill machinery.....	(X)	61.3	(X)	105.1
35481 13	Plate rolling mill machinery, except tinplate machinery.....	(X)	15.4		
35481 19	Other hot rolling mill machinery and equipment.....	(X)	84.7		
	Cold rolling mill machinery:				
35481 21	Tandem roll mills.....	(X)	35.5	(X)	79.7
35481 23	Single stand roll mills.....	(X)	33.7		
35481 29	Other cold rolling mill machinery and equipment.....	(X)	40.2		
35481 35	Tube mill machinery.....	(X)	12.6	(X)	16.4
35481 55	Other.....	(X)	44.7	(X)	19.4
35481 00	Rolling mill machinery and equipment, n.s.k.....	(X)	4.8	(X)	1.6
35482 --	Power-driven handtools, including parts and attachments, total.....	(X)	431.6	(X)	319.9
	Portable power-driven handtools which are controlled by hand including high cycle:				
	Electric:				
	Drills:				
	Armature mounted primarily on sleeve bearings:				
35482 01	1/4" chuck size and under.....	1,938.7	17.5	<sup>1</sup> 1,992.7	<sup>1</sup> 21.4
35482 03	5/16" up to and including 3/8".....	872.4	11.7	<sup>1</sup> 989.9	<sup>1</sup> 11.2
35482 04	1/2" and larger.....	453.0	10.1	<sup>1</sup> 742.4	<sup>1</sup> 13.9
	Armature mounted primarily on other than sleeve bearings:				
35482 05	1/4" chuck size and under.....	485.0	6.9	( <sup>1</sup> )	( <sup>1</sup> )
35482 07	5/16" up to and including 3/8".....	423.5	6.9	( <sup>1</sup> )	( <sup>1</sup> )
35482 09	1/2" and larger.....	314.4	9.7	( <sup>1</sup> )	( <sup>1</sup> )
35482 22	Screwdrivers and nut-runners.....	68.4	4.6	19.5	1.9
35482 24	Hammers.....	68.9	10.1	42.2	6.4
35482 25	Impact wrenches.....	86.1	6.9	55.7	4.5
35482 27	Planers and routers.....	(NA)	7.6	100.3	4.9
35482 31	Grinders, polishers, circular sanders, except bench grinders.....	375.9	12.5	460.8	12.9
35482 33	Sanders (belt, oscillating and reciprocating).....	851.5	19.6	655.7	12.4
	Saws--circular:				
	Armature mounted primarily on sleeve bearings:				
35482 11	7" blade and smaller.....	590.6	12.3	<sup>2</sup> 1,034.9	<sup>2</sup> 22.3
35482 13	Over 7" blade.....	91.4	2.6	<sup>2</sup> 137.7	<sup>2</sup> 7.4
	Armature mounted on other than sleeve bearings:				
35482 15	7" blade and smaller.....	(NA)	10.2	( <sup>2</sup> )	( <sup>2</sup> )
35482 17	Over 7" blade.....	525.4	14.5	( <sup>2</sup> )	( <sup>2</sup> )
35482 18	Saws--jig, saber, reciprocating.....	1,476.0	23.9	1,175.7	18.3
35482 29	Other electric-powered handtools.....	(X)	18.8	(X)	9.9
35482 34	Parts, attachments, and accessories for electric-powered handtools (sold separately) excluding saw blades, drills, screwdrivers, etc..	(X)	47.2	(X)	<sup>r</sup> 45.5
	Pneumatic:				
35482 35	Drill, screwdrivers and nut-runners.....	186.8	27.9	<sup>r</sup> 105.2	<sup>r</sup> 17.7
35482 37	Percussion tools (such as runners, riveters, chippers, scalers holder-ons).....	85.1	13.3	55.6	<sup>r</sup> 9.1
35482 41	Impact wrenches.....	(NA)	24.4	<sup>r</sup> 96.7	<sup>r</sup> 17.0
35482 43	Grinders, polishers, sanders.....	96.8	13.8	93.5	12.8
35482 49	Other pneumatic-powered handtools.....	(X)	29.2	(X)	19.7
35482 51	Parts, attachments, and accessories for pneumatic-powered handtools (sold separately) excluding drills, screwdrivers, etc.....	(X)	47.5	(X)	<sup>r</sup> 46.0
35482 61	Powder-actuated handtools.....	(NA)	3.0	50.9	2.1
35482 00	Power-driven handtools, including parts and attachments, n.s.k.....	(X)	18.9	(X)	2.7
35483 --	Welding and cutting apparatus, except electric, total.....	(X)	69.5	(X)	54.7
35483 23	Gas type cutting apparatus, including machines.....	(X)	29.4	(X)	54.1
35483 25	Gas type welding apparatus, including machines.....	(X)	22.9		
35483 29	Other nonelectric welding and cutting equipment.....	(X)	13.4		
35483 00	Welding and cutting apparatus, except electric, n.s.k.....	(X)	3.8	(X)	0.6
35484 11	Automotive maintenance equipment (such as motor analyzers, wheel balancers, sparkplug cleaners, wheel spinners, frame straighteners, etc.)	(X)	58.1	(X)	47.7

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000 of units)	Value (million dollars)	Quantity (1,000 of units)	Value (million dollars)
3548- --	METALWORKING MACHINERY, N.E.C.--Continued				
35485 --	Other metalworking machinery, total.....	(X)	87.2	(X)	36.6
35485 00	Drawing machines, draw benches, and machines for weaving and other wire fabricating:				
	As reported on the census of manufactures <sup>3</sup> .....	(X)	53.8	(X)	28.9
	As reported on Census Form M35W <sup>3</sup> .....	(X)	42.9	(X)	21.3
35485 98	All other metalworking machinery, except machine tools <sup>4</sup> .....	(X)	33.4	(X)	7.7
35480 00	Metalworking machinery, n.s.k. (For companies with 10 or more employees. See Note.).....	(X)	38.0	(X)	20.9
35480 02	Metalworking machinery, n.s.k. (For companies with less than 10 employees. See Note.).....	(X)	7.4		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. <sup>R</sup>Revised. (X) Not applicable.

<sup>1</sup>In 1963, product codes 35482 05, 35482 07, and 35482 09 are combined with comparable drills with armature mounted primarily on sleeve bearings.

<sup>2</sup>In 1963, product codes 35482 15 and 35482 17 are combined respectively with product codes 35482 11 and 35482 13.

<sup>3</sup>For these products, data were also collected on Census quarterly Form M35W. In lieu of asking for detailed statistics on these products in the census of manufactures, respondents were asked to report only value of shipments for specified classes of products for which separate figures had previously been collected on the quarterly Form M35W. In most cases, the value figures reported in the census of manufactures for each class of products agreed closely with the corresponding figures reported in the quarterly survey. However, there were some differences between the census figures and the quarterly survey figures. These variations were due primarily to the following reasons:

- Census of manufactures reports correctly including all accessories or attachments ordered and shipped with the machine. In some cases the quarterly survey represents only the value of the basic machine. This is the most significant factor for these differences.
- Use of different bases for reporting value (company sales vs. factory production).
- Use of estimates in reporting data on the quarterly survey, whereas census of manufactures figures generally represent more exact shipments figures.
- Better coverage in the census of manufactures program.

<sup>4</sup>A major portion of this value represents metalworking assembly and automation equipment, not elsewhere classified.



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3548.--METALWORKING MACHINERY, N.E.C.					
	Materials, parts, containers, and supplies, total.....		(X)	392.5	(X)	279.5
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	32.3	8.6	27.2	5.7
331012	Sheet and strip.....	..do.....	24.8	5.7	20.2	3.5
331013	Plates.....	..do.....	66.1	12.0	54.3	8.5
331015	Structural shapes.....	..do.....	15.7	2.8	11.5	2.1
331017	Wire and wire products.....	..do.....	0.8	0.9	2.3	0.9
331019	All other carbon steel mill shapes and forms.....	..do.....	16.0	12.1	6.5	1.2
	Alloy steel (except stainless)					
331021	Bars and bar shapes.....	..do.....	11.9	5.6	12.3	4.6
331029	All other alloy steel mill shapes and forms.....	..do.....	5.3	2.4	5.6	2.2
331031	Stainless steel.....	..do.....	(NA)	0.7	0.2	0.6
	Copper and copper-base alloy:					
335728	Bar wire (for electrical conduction).....	Million lbs.....	3.3	2.6	0.7	0.6
335790	Insulated wire and cable.....	Million lbs. (copper content)	(NA)	3.5	2.2	2.9
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	7.4	5.0	4.4	2.7
335123	Plate, sheet, and strip, including military cups and discs..	..do.....	0.2	0.1	0.1	0.1
335127	Pipe and tube.....	..do.....	(2)	(2)	0.6	0.4
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	..do.....	(NA)	0.7	0.7	0.6
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	..do.....	(NA)	1.4	0.1	0.1
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	..do.....			2.2	1.1
339915	Metal powders.....	..do.....	(3)	(3)	(NA)	(NA)
331051	Pig iron, excluding silvery iron.....	1,000 short tons.	(3)	(3)	14.6	0.9
999811	Iron and steel scrap (excluding home scrap).....	..do.....	(3)	(3)	36.5	1.5
	Castings (rough and semifinished): <sup>4</sup>					
332011	Iron (gray and malleable).....	..do.....	19.1	9.0	26.3	9.1
332300	Steel.....	..do.....	23.0	13.0	20.6	12.0
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	18.4	15.6	12.4	11.1
336200	Copper and copper-base alloy.....	..do.....	1.8	1.5	3.0	2.0
339100	Iron and steel forgings <sup>4</sup> .....	1,000 short tons.	(NA)	9.7	6.1	4.5
	Electric motors and generators: <sup>4</sup>					
	Fractional horsepower electric motors (under 1 hp.):					
362110	Timing motors, synchronous and subsynchronous.....	1,000.....	( <sup>5</sup> )	( <sup>5</sup> )	188.7	2.0
362115	Other fractional horsepower electric motors.....	..do.....	(NA)	5.9	363.6	4.8
362120	Integral horsepower motors and generators (1 hp. and over).....	..do.....	(NA)	3.5	7.3	3.7
	Bearings:					
356218	Ball.....	..do.....	(X)	8.8	(X)	6.1
356201	Roller.....	..do.....	(X)	8.8	(X)	4.1
970099	All other materials and components, parts, containers, and supplies consumed.....	..do.....	(X)	223.2	(X)	152.0
976000	Materials, parts, containers and supplies, n.s.k. <sup>6</sup> .....	..do.....	(X)	39.4	(X)	28.1

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>The figures are understated by \$5 million or less because of apparent undercoverage of carbon steel pipe and tubes.<sup>2</sup>Included with material code 970099, "All other materials and components, etc."<sup>3</sup>Included with material code 970099, "All other materials and components" to avoid disclosing figures for individual companies.<sup>4</sup>No data are available for castings, iron and steel forgings, or electric motors and generators produced and consumed in the same establishment except for code 362115. Other fractional horsepower electric motors, which totaled 2,007.2 thousand units in 1963.<sup>5</sup>Included with material code 970099, "All other materials and components, etc." The value of these individual materials is less than \$2.5 million.<sup>6</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3548, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

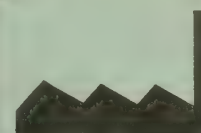
**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# 1967 CENSUS OF MANUFACTURES



MC67(P)-35D-1

## INDUSTRY SERIES

### Food products machinery

### preliminary report

SIC Code 3551

The Food Products Machinery Industry includes establishments primarily engaged in manufacturing machinery for use by the food products and beverage manufacturing industries in the preparation, canning, or packaging of food products; and parts and attachments for such machinery. Establishments primarily engaged in manufacturing industrial refrigeration machinery are classified in Group 358.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Food Products Machinery Industry

amounted to \$824.8 million, an increase of 29 percent compared with 1963. Value added by manufacture at \$499.5 million in 1967 was 32 percent more than value added in 1963. Average employment in the industry showed an increase of 2 percent from 1963 to a total of 32 thousand employees in 1967.

Of the \$824.8 million total value of shipments and other receipts of establishments classified as food products machinery, \$81 million were products primary to other industries; and \$152 million were receipts for miscellaneous activities. The industry shipments of primary products represented 88 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 86 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (per-cent)	Coverage ratio (per-cent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3551. --FOOD PRODUCTS MACHINERY														
1967 Census....	639	279	32.3	248.6	21.8	45.0	146.6	499.5	336.0	824.8	21.9	197.7	88	87
1966 ASM <sup>1</sup> .....	(NA)	(NA)	35.4	250.2	23.9	50.0	149.9	519.7	328.5	827.3	18.3	194.2	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	33.5	231.6	23.4	47.6	136.2	462.8	294.6	750.3	14.3	170.0	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	32.6	216.9	20.8	43.9	122.6	435.8	287.6	715.0	*20.3	162.2	(NA)	(NA)
1963 Census....	681	279	31.7	205.4	21.0	43.3	118.0	380.4	255.3	640.5	11.0	154.1	86	87
1962 ASM <sup>1</sup> .....	(NA)	(NA)	31.9	201.5	21.7	45.6	115.1	365.1	260.8	626.2	11.8	155.8	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	30.9	187.9	20.9	42.3	103.8	359.7	250.5	588.0	10.5	162.9	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	30.5	181.3	20.3	42.7	103.6	337.8	227.8	557.3	8.8	135.5	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	28.7	165.0	19.1	38.8	93.4	300.6	205.9	501.1	9.3	129.3	(NA)	(NA)
1958 Census <sup>2</sup> ...	672	240	27.7	152.5	18.2	36.3	86.8	268.6	185.8	456.2	7.8	119.4	87	84

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 2, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary  
Rocco C. Siciliano, Under Secretary  
BUREAU OF THE CENSUS George Hay Brown, Director

The total value of food products machinery shipped by all producers in 1967 was \$682.7 million of which \$592 million, or 87 percent, were shipped by plants classified in industry 3551, Food Products Machinery, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was also 87 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)						
INDUSTRY 3551.--FOOD PRODUCTS MACHINERY													
United States, total.....	639	279	32.3	248.6	21.8	45.0	146.6	499.5	336.0	824.8	21.9	31.7	380.4
New England.....	34	12	1.9	15.1	1.2	2.5	8.2	32.7	19.0	51.0	2.5	2.4	27.1
Massachusetts.....	20	8	1.2	9.0	0.7	1.5	4.7	20.0	11.4	31.7	(D)	1.8	20.4
Connecticut.....	10	4	0.7	6.0	0.5	1.1	3.5	12.5	7.4	19.0	(D)	(D)	(D)
Middle Atlantic.....	123	48	3.6	24.9	2.6	5.1	15.1	49.0	32.1	79.4	1.5	4.1	45.3
Pennsylvania.....	34	17	1.1	7.9	0.8	1.7	5.0	12.6	10.2	23.1	(D)	(D)	(D)
East North Central....	187	91	13.3	109.6	8.9	18.6	63.1	233.7	149.7	375.9	8.1	13.1	182.7
Ohio.....	34	18	2.9	23.2	2.0	4.2	14.2	51.2	38.7	88.6	2.5	3.6	44.8
Indiana.....	18	6	0.8	6.3	0.6	1.2	4.3	14.1	8.1	21.9	1.0	0.6	9.4
Illinois.....	78	39	5.1	37.8	3.4	7.1	22.7	66.9	50.7	115.4	1.8	4.3	52.5
Michigan.....	19	11	2.1	23.6	1.3	2.5	11.3	66.4	23.9	87.5	2.0	2.3	49.7
Wisconsin.....	38	17	2.4	18.8	1.6	3.6	10.7	35.1	28.3	62.5	0.9	2.3	26.3
West North Central....	72	31	3.1	22.9	2.1	4.4	13.3	45.2	38.2	82.7	1.9	3.0	30.7
Iowa.....	14	8	1.2	8.7	0.8	1.8	5.2	17.9	16.3	35.6	1.2	1.1	9.3
Missouri.....	26	10	1.0	7.8	0.7	1.5	4.7	15.0	10.6	24.8	0.3	0.9	11.4
Kansas.....	8	5	0.4	2.5	0.3	0.5	1.3	4.1	3.9	7.9	0.1	0.5	4.9
South Atlantic.....	53	33	4.0	27.2	2.6	5.3	16.1	52.2	40.1	94.1	1.5	3.9	38.4
Georgia.....	15	9	1.0	6.8	0.7	1.5	3.9	13.8	9.0	22.8	0.3	0.9	7.2
East South Central....	18	6	0.6	4.7	0.4	0.8	2.6	9.8	4.6	14.2	(D)	0.4	5.8
Kentucky.....	8	5	0.5	4.2	0.3	0.7	2.3	8.3	3.5	11.5	0.2	0.4	5.6
West South Central....	26	10	0.9	5.9	0.6	1.2	3.2	10.4	9.3	19.9	0.4	1.2	11.6
Texas.....	16	5	0.6	4.1	0.4	0.7	2.1	7.3	6.8	14.4	(D)	0.9	8.5
West.....	126	48	4.9	38.4	3.5	7.0	24.8	66.5	43.1	107.5	(D)	3.6	38.9
Washington.....	10	2	0.2	1.6	0.2	0.4	1.3	3.2	1.8	4.9	(Z)	0.2	2.1
Oregon.....	8	2	0.1	1.2	0.1	0.2	0.7	2.6	0.9	3.5	(D)	(D)	(D)
California.....	94	38	3.9	31.1	2.7	5.4	19.6	53.2	35.0	86.9	(D)	2.7	29.3

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.  
(Z) Less than \$50 thousand.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (\$1,000)	Quantity	Value (\$1,000)
3551- --	FOOD PRODUCTS MACHINERY, TOTAL.....		(X)	682.7	(X)	517.3
35511 --	Dairy and milk products plant machinery and equipment.....		(X)	76.9	(X)	71.6
35511 11	Fluid milk bottling, filling, packaging and capping machines (glass, paper, and other materials).....		(X)	14.0	(X)	13.2
35511 12	Butter, cheese, dry milk, and ice cream packaging machines.....	No. of units...	159	1.2	718	4.8
35511 13	Uncasers and casers.....	..do.....	(1)	(1)	347	4.7
35511 19	Washing, sterilizing, capping, and other dairy bottling machines	..do.....	(NA)	1.0	(NA)	3.9
35511 43	Pasteurizers.....	..do.....	106	0.4	497	3.9
35511 51	Homogenizers.....	..do.....	(1)	(1)	288	1.8
35511 73	Ice cream freezers.....	..do.....	7,664	24.7	4,955	11.8
35511 83	Butter and cheese processing plant machinery and equipment.....	..do.....	698	2.0	755	3.3
35511 91	Dry milk processing plant machinery and equipment.....	..do.....			58	4.6
35511 98	Other dairy and milk products processing plant machinery and equipment, including cream separators (capacity over 1,500 pounds per hour).....		(X)	126.7	(X)	18.2
35511 00	Dairy and milk products plant machinery and equipment, n.s.k....		(X)	6.9	(X)	1.4
35512 --	Commercial food products machinery, total.....	1,000 units....	(X)	145.9	(X)	117.6
35512 11	Slicers.....	..do.....	29.3	13.8	20.5	9.8
35512 21	Choppers, grinders, cutters, dicers, and similar machines.....	..do.....	25.8	13.4	35.2	15.1
35512 31	Mixers and whippers (except drink mixers).....	..do.....	16.3	15.2	13.7	11.0
35512 51	Parts and attachments for commercial food-preparation machines..		(X)	11.6	(X)	10.1
35512 41	Other commercial food-preparation machines, including tenderizers (power-driven).....		(X)	15.9	(X)	13.8
35512 61	Bakery machinery and equipment:					
	Dough mixers.....	No. of units...	10,428	7.7	5,476	3.5
	Bake ovens:					
35512 71	Traveling tray.....	..do.....	167	4.8	106	4.6
35512 75	Other.....	..do.....	2,489	13.0	1,373	5.2
35512 81	Slicing machines <sup>2</sup> .....	..do.....	771	1.8	1,405	2.4
35512 85	Wrapping machines <sup>2</sup> .....	..do.....	388	3.8	314	4.6
35512 87	Continuous breadmaking equipment.....		(X)	27.8	(X)	4.3
35512 91	Other bakery machinery and equipment.....		(X)		(X)	28.6
35512 00	Commercial food products machinery, n.s.k.....		(X)	17.1	(X)	4.7
35513 --	Other industrial food products machinery, including parts and attachments for all types of industrial food products machinery, total.....		(X)	389.9	(X)	300.5
35513 11	Meat-packing and poultry-packing plant machinery and equipment, including killing, dehairing, stuffing, cooking, rendering, cutting, pressing, grinding, chopping, and canning machines, etc.....		(X)	49.2	(X)	32.7
35513 23	Fruit- and vegetable-canning and packing machinery:					
	Preparation machinery.....		(X)	35.4	(X)	17.0
35513 25	Wrapping, filling, and sealing machinery.....		(X)	19.9	(X)	6.7
35513 27	Packing machinery.....	No. of units...	1,630	6.8	759	5.5
35513 29	All other fruit- and vegetable-canning machinery.....		(X)	9.6	(X)	12.8
35513 33	Flour mill and grain mill machinery:					
	Packing and packaging machinery.....		(X)	4.2	(X)	32.6
35513 39	Other flour mill and grain mill machinery.....		(X)	15.5		
35513 43	Sugar plant machinery, including cane and beet mills, crushers, pulverizers, crystallizers, granulators, etc:					
	Packing and packaging machinery.....		(X)	11.3	(X)	13.9
35513 49	Other sugar-plant machinery.....		(X)	6.3	(X)	11.3
35513 53	Other industrial food products machinery:					
	Packing and packaging machinery.....		(X)	47.9	(X)	30.9
35513 59	Other industrial food products machinery.....		(X)	44.3	(X)	37.7
35513 65	Bottling machinery for foods (except dairy products, liquor, beer, wine, and other beverages):					
	Filling, capping, and labeling machines.....	No. of units...	2,854	49.6	1,798	27.4
35513 66	Uncasers and casers.....	..do.....	(NA)	5.4	445	3.4
35513 67	Bottle washers and sterilizers.....	..do.....	287	13.8	380	11.4
35513 61	Carbonators (beverage bottling).....	..do.....				
35513 69	Other food bottling machinery, except dairy.....		(X)	19.0	(X)	15.0

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963--Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (\$1,000)	Quantity	Value (\$1,000)
3551- --	FOOD PRODUCTS MACHINERY--Continued					
35513 --	Other industrial food products machinery, including parts and attachments for all types of industrial food products machinery--Continued					
35513 81	Parts and attachments for industrial food products machinery....		(X)	34.8	(X)	33.2
35513 00	Other industrial food products machinery, including parts and attachments for all types of industrial food products machinery, n.s.k.....		(X)	16.9	(X)	8.9
35510 00	Food products machinery, n.s.k. (For companies with 10 or more employees. See Note.).....		(X)	58.4	(X)	27.6
35510 02	Food products machinery, n.s.k. (For companies with less than 10 employees. See Note.).....		(X)	11.6		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>1967 data for product code 35511 13, uncasers and casers and product code 35511 51, homogenizers are included with product code 35511 98, other dairy and milk products processing machinery.

<sup>2</sup>For combination slicing and wrapping machines the number and value of slicing units are included with slicing machines and the number and value of wrapping units with wrapping machines.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3551.--FOOD PRODUCTS MACHINERY					
	Materials, parts, containers, and supplies, total.....	.....	(X)	275.6	(X)	204.8
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	33.3	7.5	26.5	6.7
331012	Sheet and strip.....	do.....	36.5	6.5	35.3	5.9
331013	Plates.....	do.....	28.2	5.4	18.4	2.9
331015	Structural shapes.....	do.....	14.8	2.9	12.2	2.2
331019	All other carbon steel mill shapes and forms.....	do.....	8.1	2.5	6.4	2.0
331020	Alloy steel (except stainless).....	do.....	5.7	2.7	4.1	1.6
331031	Stainless steel.....	do.....	13.5	17.3	10.4	13.2
335121	Copper and copper-base alloy mill shapes and forms.....	Million lbs.....	1.6	1.2	1.3	1.0
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	do.....	1.6	1.1	2.2	1.2
335209	All other aluminum mill shapes and forms (extruded shapes, wire, rod, bar, powder, tubing, etc.).....	do.....	0.8	0.7	1.5	0.8
	Castings (rough and semifinished): <sup>1</sup>					
332011	Iron (gray and malleable).....	1,000 short tons.	20.1	10.7	23.6	9.6
332300	Steel.....	do.....	4.3	3.6	5.3	3.8
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	3.0	3.6	4.0	3.4
336200	Copper and copper-base alloy.....	do.....	2.0	1.9	2.1	1.6
	Electrical motors and generators: <sup>1</sup>					
362115	Fractional horsepower electric motors (under 1 hp.) (excluding timing motors).....	1,000.....	127.5	5.1	85.7	3.0
362120	Integral horsepower motors and generators (1 hp. and over).....	do.....	51.7	7.1	51.3	8.7
	Bearings:					
356218	Ball.....	.....	(X)	3.2	(X)	2.3
356201	Roller.....	.....	(X)	1.6	(X)	1.8
970099	All other materials and components, parts, containers, and supplies consumed.....	.....	(X)	142.1	(X)	90.4
976000	Materials, etc., n.s.k. <sup>2</sup> .....	.....	(X)	48.9	(X)	42.6

n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>No data are available for castings or electric motors and generators produced and consumed in the same establishment except for iron castings (4.9 thousand short tons) and aluminum castings (0.3 million pounds), in 1963.<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3551, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.

## Appendix

### EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

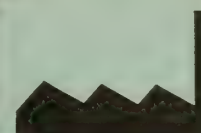
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-35D-2

## INDUSTRY SERIES

**preliminary  
report**

### Textile machinery

SIC Code 3552

The Textile Machinery Industry includes establishments primarily engaged in manufacturing machinery for the textile industries, and extra parts, attachments, and accessories. Establishments primarily engaged in manufacturing domestic or industrial sewing machines are classified in industry 3636.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Textile Machinery Industry amounted to \$712.5 million, an increase of 31 percent compared with 1963. Value added by manufacture

at \$404.9 million in 1967 was 29 percent more than value added in 1963. Average employment in the industry showed an increase of 11 percent from 1963 to a total of 39.6 thousand employees in 1967.

Of the \$712.5 million total value of shipments and other receipts of establishments classified as textile machinery, \$47 million were products primary to other industries; and \$54 million were receipts for miscellaneous activities. The industry shipments of primary products represented 93 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was also 93 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (per-cent)	Coverage ratio (per-cent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3552.--TEXTILE MACHINERY														
1967 Census . . .	557	238	39.6	252.3	29.3	62.2	168.4	404.9	308.9	712.5	22.2	185.3	93	95
1966 ASM <sup>1</sup> . . . . .	(NA)	(NA)	42.7	268.4	31.9	70.9	181.6	455.5	375.3	820.3	25.2	193.6	(NA)	(NA)
1965 ASM <sup>1</sup> . . . . .	(NA)	(NA)	41.2	247.2	30.8	68.1	166.3	408.2	318.6	707.9	20.2	171.3	(NA)	(NA)
1964 ASM <sup>1</sup> . . . . .	(NA)	(NA)	37.5	212.1	28.2	59.0	142.1	359.4	259.2	605.2	*15.0	145.2	(NA)	(NA)
1963 Census . . . . .	561	216	36.0	196.4	26.9	56.1	129.1	314.2	232.3	542.7	13.9	135.3	93	94
1962 ASM <sup>1</sup> . . . . .	(NA)	(NA)	38.7	201.7	27.6	60.7	137.7	347.0	230.7	574.9	*15.3	134.5	(NA)	(NA)
1961 ASM <sup>1</sup> . . . . .	(NA)	(NA)	37.7	192.8	26.5	58.7	129.8	317.8	214.7	530.3	*13.0	131.4	(NA)	(NA)
1960 ASM <sup>1</sup> . . . . .	(NA)	(NA)	39.3	188.3	28.6	61.6	131.6	325.2	219.4	538.5	*11.4	123.7	(NA)	(NA)
1959 ASM <sup>1</sup> . . . . .	(NA)	(NA)	35.8	173.6	27.6	58.2	120.6	271.3	186.9	445.5	6.8	115.4	(NA)	(NA)
1958 Census <sup>2</sup> . . . . .	553	212	34.3	154.5	25.6	51.2	101.9	214.2	154.2	376.3	8.5	99.2	87	94

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued September 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director

## 1967 CENSUS OF MANUFACTURES

The total value of textile machinery shipped by all producers in 1967 was \$644 million of which \$611 million, or 95 percent, were shipped by plants classified in industry 3552, Textile Machinery, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 94 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
	INDUSTRY 3552.--TEXTILE MACHINERY												
United States, total.....	557	238	39.6	252.3	29.3	62.2	168.4	404.9	308.9	712.5	22.2	36.0	314.2
New England.....	124	53	12.6	80.2	8.7	18.4	52.6	127.1	96.3	223.5	4.4	14.3	132.3
Massachusetts.....	77	35	8.1	50.8	5.7	12.0	35.3	70.8	70.5	144.2	2.8	9.8	88.9
Middle Atlantic.....	160	52	9.2	66.1	7.1	15.1	45.0	88.0	64.8	153.3	3.7	8.7	73.1
New York.....	47	10	1.1	8.3	0.9	1.8	5.2	16.8	13.3	29.9	0.3	1.1	12.3
New Jersey.....	63	18	1.2	8.9	0.9	1.9	5.6	13.7	11.9	25.2	0.9	1.4	12.8
Pennsylvania.....	50	24	6.9	48.9	5.2	11.4	34.2	57.4	39.6	98.2	2.5	6.2	47.9
North Central.....	26	6	1.5	11.5	1.0	1.8	6.5	18.2	10.2	27.3	1.5	1.1	9.2
South.....	240	126	16.2	94.2	12.5	26.9	64.0	171.2	137.3	307.5	12.6	11.9	99.3
South Atlantic.....	224	119	15.3	88.0	11.9	25.4	59.6	159.7	131.8	291.0	11.5	(D)	(D)
North Carolina.....	127	68	7.6	43.8	5.7	12.4	28.7	90.6	64.6	152.4	(D)	5.3	44.4
Georgia.....	32	20	1.5	8.6	1.3	2.7	6.2	12.6	13.5	27.0	0.4	1.1	8.8
Tennessee.....	7	5	0.7	5.2	0.5	1.0	3.6	9.8	5.0	14.4	(D)	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3552- --	TEXTILE MACHINERY, TOTAL.....		(X)	644.3	(X)	499.1
35521 --	Textile machinery, total.....		(X)	341.2	(X)	252.6
	Fiber-to-fabric textile machinery (except parts, attachments, and accessories):					
35521 15	Cleaning and opening machinery, including picker, garnetting, and other.....	1,000.....	<sup>e</sup> 2.5	11.2	1.1	4.3
35521 25	Carding machines and combing machines.....	.....do.....	<sup>e</sup> 0.8	10.5	0.5	13.3
35521 36	Drawing and roving frames.....	.....do.....	<sup>e</sup> 2.8	25.8	1.7	16.3
	Spinning and twisting frames:					
35521 42	Frames.....	.....do.....	3.7	40.0	2.6	29.1
35521 46	Total spindles.....	.....do.....	1,070.6	(X)	756.3	(X)
	Twisting frames:					
35521 47	Frames.....	.....do.....	1.4	21.8	0.7	12.0
35521 48	Total spindles.....	.....do.....	223.9	(X)	85.9	(X)
	Yarn preparing machines:					
35521 51	Winding machines (skein, spool, bobbin, quill, cone, etc.)..	.....do.....	2.4	19.9	1.0	13.8
35521 53	Other yarn-preparing machines (beaming, warping, warp tying, warp drawing in, splashing, etc.).....	.....do.....	(X)	13.3	(X)	6.5
35521 55	Other fiber-to-fabric machinery.....	.....do.....	(X)	17.6	(X)	19.2
35521 65	Fabric machinery (except parts, attachments, and accessories):					
	Power looms (including looms operated without shuttles), all types including cotton and synthetic broadlooms.....	1,000.....	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
	Knitting machines:					
35521 72	Hosiery (circular and full fashioned).....	.....do.....	5.3	44.8	5.7	22.0
35521 75	Other knitting machines.....	.....do.....			1.7	17.2
35521 84	Other fabric machinery (including lace, embroidery, braiding, and tufting machinery, and hand looms).....	.....do.....	(NA)	248.9	(NA)	246.2
35521 85	Bleaching, dyeing, and finishing machinery.....	.....do.....	(X)	39.0	(X)	28.1
35521 87	Machinery for drying stocks, yarns, cloth, etc.....	.....do.....	(X)	10.4	(X)	8.0
35521 98	Other textile industries machinery, n.e.c. (except parts, attachments, and accessories).....	.....do.....	(X)	27.2	(X)	23.5
35521 00	Textile machinery, n.s.k.....	.....do.....	(X)	10.8	(X)	3.0
35522 --	Parts and attachments for textile machinery.....	.....do.....	(X)	266.4	(X)	232.1
35522 11	Textile machinery turning and shapes (bobbins, shuttles, spools, picker sticks, etc.).....	.....do.....	(X)	60.2	(X)	38.2
	Parts and attachments:					
	Fiber-to-fiber machinery:					
33522 22	Card clothing.....	Millions sq.ft	<sup>e</sup> 3.5	18.9	1.9	9.3
35522 31	Other fiber-to-fabric machines, except card cloth.....	.....do.....	(X)	53.3	(X)	47.4
35522 41	Power looms.....	.....do.....	(X)	64.5	(X)	66.2
35522 45	Knitting machines, excluding needles.....	.....do.....	(X)	8.4	(X)	10.7
35522 53	Fabric machinery, except power looms and knitting machines....	.....do.....	(X)	10.1	(X)	6.8
35522 71	Bleaching, dyeing, and finishing machinery.....	.....do.....	(X)	5.6	(X)	7.7
35522 98	Other textile-industries machinery.....	.....do.....	(X)	39.8	(X)	40.6
35522 00	Parts and attachments for textile machinery, n.s.k.....	.....do.....	(X)	5.6	(X)	5.2
35520 00	Textile-industries machinery, including parts and attachments, n.s.k. (For companies with 10 or more employees. See Note.)....	.....do.....	(X)	27.7	(X)	14.4
35520 02	Textile-industries machinery, including parts and attachments, n.s.k. (For companies with less than 10 employees. See Note.)....	.....do.....	(X)	9.0		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

<sup>e</sup>From 10 to 30 percent of this figure was estimated. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>The 1963 data for "combing machines" are included with product code 3552155, other fiber-to-fabric machinery.

<sup>2</sup>Data for product code 3552165, power looms, are included with product code 35521884, other fabric machinery.



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3552.--TEXTILE MACHINERY					
	Materials, parts, containers, and supplies, total.....		(X)	280.1	(X)	209.8
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	49.8	13.8	41.5	10.1
331012	Sheet and strip.....	..do.....	29.0	7.6	24.4	5.4
331015	Structural shapes.....	..do.....	10.2	2.1	9.5	1.9
331017	Wire and wire products.....	..do.....	7.0	5.9	6.0	5.0
331019	All other carbon steel mill shapes and forms.....	..do.....	4.2	1.4	3.2	1.3
331020	Alloy steel (except stainless).....	..do.....	4.4	2.3	2.1	1.1
331031	Stainless steel.....	..do.....	4.9	7.4	2.7	4.8
335121	Copper and copper-base alloy mill shapes and forms.....	Million lbs.....	( <sup>1</sup> )	( <sup>1</sup> )	3.3	2.0
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	..do.....	2.3	1.7	1.2	0.8
335205	Extruded shapes (including extruded rod, bar, pipe, tube, etc.).....	..do.....	(NA)	3.0	1.4	1.1
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	..do.....	1.4	0.9	1.6	0.9
	Primary metal and scrap:					
331051	Pig iron excluding silvery iron.....	1,000 short tons.	( <sup>1</sup> )	( <sup>1</sup> )	21.4	1.4
999811	Iron and steel scrap (excluding home scrap).....	..do.....	( <sup>1</sup> )	( <sup>1</sup> )	17.6	1.1
	Castings (rough and semifinished):					
332011	Iron (gray and malleable).....	..do.....	54.6	20.7	57.5	22.0
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	( <sup>1</sup> )	( <sup>1</sup> )	2.1	1.9
362120	Integral horsepower electric motors and generators (1 hp. and over).....	1,000.....	(NA)	7.2	25.0	4.4
	Bearings:					
356218	Ball.....	.....	(X)	5.8	(X)	5.5
356201	Roller.....	.....	(X)	1.3	(X)	0.9
970099	All other materials and components, parts, containers, and supplies consumed.....	.....	(X)	154.1	(X)	116.7
972000	Materials, etc., n.s.k. <sup>2</sup> .....	.....	(X)	44.9	(X)	21.4

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Combined with material code 970099, "All other materials and components, parts, containers, and supplies consumed."<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3552, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees**--All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls**--This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours**--This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials**--The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed**--In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments**--The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

**U.S. DEPARTMENT OF COMMERCE  
BUREAU OF THE CENSUS  
WASHINGTON, D.C. 20233**

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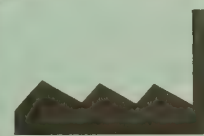
**OFFICIAL BUSINESS**

**POSTAGE AND FEES PAID  
U.S. DEPARTMENT OF COMMERCE**





# 1967 CENSUS OF MANUFACTURES



MC67(P)-35D-3

## INDUSTRY SERIES

### Woodworking machinery

SIC Code 3553

**preliminary  
report**

The Woodworking Machinery Industry includes establishments primarily engaged in manufacturing machinery for sawmills, planing mills, cabinet and furniture makers, patternmakers, and veneer workers. Establishments primarily engaged in manufacturing handtools such as planes, axes, drawknives, and handsaws are classified in Group 342; and portable power-driven handtools in industry 3548.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Woodworking Machinery Industry

amounted to \$314.0 million, an increase of 24 percent compared with 1963. Value added by manufacture at \$190.8 million in 1967 was 30 percent more than value added in 1963. Average employment in the industry showed an increase of 8 percent from 1963 to a total of 12.6 thousand employees in 1967.

Of the \$314.0 million total value of shipments and other receipts of establishments classified as woodworking machinery, \$50 million were products primary to other industries; and \$26 million were receipts for miscellaneous activities. The industry shipments of primary products represented 76 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 77 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Special-ization ratio (per-cent)	Coverage ratio (per-cent)
	Total  (number)	With 20 employ-ees or more (number)	Number  (1,000)	Payroll  (million dollars)	Number  (1,000)	Man-hours (millions)	Wages  (million dollars)							
INDUSTRY 3553.— WOODWORKING MACHINERY														
1967 Census....	238	87	12.6	83.7	8.7	17.6	50.3	190.8	128.0	314.0	8.2	70.7	76	87
1966 ASM <sup>1</sup> .....	(NA)	(NA)	16.3	107.7	12.1	25.5	68.9	230.8	164.1	382.5	9.3	84.2	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	14.3	91.4	10.5	21.5	58.4	199.7	139.5	339.5	*10.4	69.6	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	14.0	89.1	10.5	21.8	59.4	181.7	121.9	299.9	5.3	73.7	(NA)	(NA)
1963 Census....	249	91	12.1	72.9	8.7	17.7	45.9	147.0	110.1	252.8	4.7	57.6	77	81
1962 ASM <sup>1</sup> .....	(NA)	(NA)	12.3	69.6	9.1	16.9	42.2	141.1	111.5	247.4	*4.6	47.8	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	10.9	62.1	7.8	14.7	37.1	113.5	88.3	213.0	*7.6	44.6	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	11.5	62.4	8.2	15.9	38.3	129.0	92.6	224.4	*3.0	49.2	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	13.1	69.3	9.1	18.4	43.6	146.4	106.8	245.9	5.2	61.7	(NA)	(NA)
1958 Census <sup>2</sup> ...	(NA)	(NA)	12.2	63.4	8.0	15.9	36.9	112.9	88.5	214.4	6.9	51.0	78	86

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued September 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director



The total value of woodworking machinery shipped by all producers in 1967 was \$273.8 million of which \$238 million, or 87 percent, were shipped by plants classified in industry 3553, Woodworking Machinery, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 81 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total	With 20 employees or more (number)	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
	INDUSTRY 3553.—WOODWORKING MACHINERY												
United States, total.....	238	87	12.6	83.7	8.7	17.6	50.3	190.8	128.0	314.0	8.2	12.1	147.0
New England.....	14	3	0.2	0.8	0.1	0.2	0.5	2.2	2.1	4.2	(Z)	0.5	4.3
Middle Atlantic.....	27	10	1.0	7.7	0.7	1.4	4.3	17.1	8.9	25.6	1.1	1.0	8.6
Pennsylvania.....	14	5	0.6	3.8	0.5	0.9	2.8	8.7	7.0	15.4	(D)	(D)	(D)
East North Central....	63	28	2.8	19.8	2.1	4.4	12.9	36.8	28.5	64.0	2.3	3.2	41.0
Illinois.....	19	6	1.1	6.7	0.8	1.7	4.7	13.6	8.5	20.9	0.8	1.0	12.6
Michigan.....	16	4	0.4	2.9	0.3	0.6	1.9	5.2	4.6	9.6	0.4	0.9	12.6
Wisconsin.....	10	7	0.6	4.6	0.5	1.1	3.2	8.4	4.6	12.9	0.6	0.7	7.8
West North Central....	9	5	0.4	2.6	0.3	0.6	2.0	5.8	3.0	8.6	0.7	1.0	10.8
South.....	54	19	4.3	23.2	2.9	5.9	13.7	74.9	52.2	127.8	2.3	2.2	74.4
West.....	71	22	3.9	29.5	2.6	5.0	16.9	54.0	33.2	83.8	1.7	4.1	47.9
Washington.....	16	6	0.7	5.3	0.5	1.0	3.3	7.8	6.6	14.2	0.4	0.6	6.4
Oregon.....	32	13	1.5	11.1	1.0	1.8	6.2	23.7	12.5	36.5	0.8	1.1	18.1

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3553- --	WOODWORKING MACHINERY, TOTAL.....		(X)	273.8	(X)	220.8
35531 --	Woodworking machinery (except home workshop) including parts and attachments.....		(X)	230.7	(X)	186.0
35531 12	Sawmill equipment.....		(X)	40.9	(X)	22.4
35531 15	Veneer and plywood-making, woodbox and crate-making machinery...		(X)	15.3	(X)	13.8
35531 62	Sawing machines (except sawmill equipment and chain saws).....	1,000 units...	(NA)	11.8	<sup>e</sup> 27.3	11.3
35531 67	Chain saws.....	..do.....	555.1	63.8	392.8	46.0
35531 71	Jointers, matchers, molders, mortisers, shapers, and tenoners (except power-driven handheld tools).....	..do.....	(NA)	15.4	(NA)	11.3
35531 81	Parts, attachments, and accessories for woodworking machinery (sold separately), excluding saw blades.....		(X)	49.4	(X)	53.8
35531 98	Other woodworking machinery (except power-driven handheld tools) including lathes, planing machines, and surfacing machines, except handheld.....		(X)	31.1	(X)	25.7
35531 00	Woodworking machinery (except home workshop) including parts and attachments, n.s.k.....		(X)	3.0	(X)	1.7
35532 --	Woodworking machinery, for home workshop (except power-driven handtools), including parts and attachments.....		(X)	29.1	(X)	29.0
35532 21	Saws, including circular.....	1,000 units...	203.0	18.4	<sup>e</sup> 219.0	19.5
35532 81	Parts, attachments, and accessories for machine tools and wood-working machines designed primarily for home workshops, etc. (sold separately), except parts for power-driven handtools (excluding saw blades).....		(X)	3.5	(X)	3.6
35532 98	Other machine tools and woodworking machines designed primarily for home workshops, etc. (except power-driven handtools), including lathes, drilling machines, jointers, planers and shapers.....		(X)	7.2	(X)	5.9
35530 00	Woodworking machinery, n.s.k. (For companies with 10 or more employees. See Note.).....		(X)	8.6	}	5.8
35530 02	Woodworking machinery, n.s.k. (For companies with 10 or more employees. See Note.).....		(X)	5.4		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

<sup>e</sup>From 10 to 30 percent of this figure was estimated. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

## 1967 CENSUS OF MANUFACTURES

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3553.— WOODWORKING MACHINERY					
	Materials, parts, containers, and supplies, total.....		(X)	112.3	(X)	94.4
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	29.7	8.7	19.3	4.4
331012	Sheet and strip.....	..do.....			17.7	4.7
331013	Plates.....	..do.....			10.3	1.9
331019	All other carbon steel mill shapes and forms.....	..do.....			4.7	1.5
331020	Alloy steel (except stainless).....	..do.....	}	}	3.1	2.7
331031	Stainless steel.....	..do.....			0.2	0.6
	Castings (rough and semifinished):					
332011	Iron (gray and malleable).....	1,000 short tons.	19.6	7.2	12.0	4.4
332300	Steel.....	..do.....	(X)	2.8	1.8	1.5
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	(X)	4.1	2.8	3.3
339100	Iron and steel forgings.....	1,000 short tons.	( <sup>1</sup> )	( <sup>1</sup> )	1.3	1.4
362120	Integral horsepower motors and generators (1 hp. and over).....	1,000.....	73.2	5.7	38.9	2.9
	Bearings:					
356218	Ball.....	.....	(X)	2.6	(X)	1.7
356201	Roller.....	.....			(X)	0.8
970099	All other materials and components, parts, containers, and supplies consumed.....	.....	(X)	51.6	(X)	47.0
972000	Materials, etc., n.s.k. <sup>2</sup> .....	.....	(X)	29.6	(X)	15.7

n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Combined with material code 970099, "All other materials and components, parts, containers, and supplies consumed."<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



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This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3553, these small establishments accounted for approximately 1 percent of payrolls and 2 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

**U.S. DEPARTMENT OF COMMERCE  
BUREAU OF THE CENSUS  
WASHINGTON, D.C. 20233**

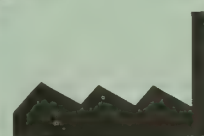
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**OFFICIAL BUSINESS**

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U.S. DEPARTMENT OF COMMERCE**



# 1967 CENSUS OF MANUFACTURES



MC67(P)-35D-4

## INDUSTRY SERIES

**preliminary  
report**

### Paper industries machinery SIC Code 3554

The Paper Industries Machinery Industry includes establishments primarily engaged in manufacturing machinery for the pulp, paper, and paper product industries. Establishments primarily engaged in manufacturing printing trades machinery are classified in industry 3555.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Paper Industries Machinery Industry amounted to \$560.0 million, an increase of 39 percent compared with 1963. Value added by

manufacture at \$285.9 million in 1967 was 32 percent more than value added in 1963. Average employment in the industry showed an increase of 16 percent from 1963 to a total of 21.6 thousand employees in 1967.

Of the \$560.0 million total value of shipments and other receipts of establishments classified as paper industries machinery, \$42 million were products primary to other industries; and \$72 million were receipts for miscellaneous activities. The industry shipments of primary products represented 91 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 88 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3554.--PAPER INDUSTRIES MACHINERY														
1967 Census....	218	108	21.6	175.1	14.6	31.2	111.9	285.9	270.7	560.0	19.1	136.8	91	87
1966 ASM <sup>1</sup> .....	(NA)	(NA)	20.2	162.0	14.0	30.1	102.0	262.6	256.5	502.8	18.7	135.6	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	20.1	153.2	14.1	30.2	95.7	242.7	245.7	483.9	12.2	116.5	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	19.2	137.2	13.5	28.3	87.7	222.1	219.8	430.1	14.2	115.0	(NA)	(NA)
1963 Census....	217	92	18.6	130.6	12.9	27.2	82.3	217.5	196.5	403.9	10.3	103.2	88	90
1962 ASM <sup>1</sup> .....	(NA)	(NA)	19.1	128.5	13.3	27.4	78.2	194.1	203.2	398.6	*9.6	98.1	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	18.6	117.9	12.7	25.4	70.4	188.0	182.3	365.0	*9.4	99.0	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	18.4	117.5	12.9	27.2	73.6	191.0	202.3	380.0	(S)	94.7	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	16.8	97.4	12.0	24.7	60.7	150.2	167.8	333.3	7.0	72.7	(NA)	(NA)
1958 Census <sup>2</sup> ...	202	97	15.7	89.9	11.4	22.7	58.2	123.8	155.6	310.2	4.8	85.6	93	91

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

(S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued September 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director

The total value of paper industries machinery shipped by all producers in 1967 was \$515.0 million of which \$446 million, or 87 percent, were shipped by plants classified in industry 3554, Paper Industries Machinery, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 90 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employ- ees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
	INDUSTRY 3554.--PAPER INDUSTRIES MACHINERY												
United States, total.....	218	108	21.6	175.1	14.6	31.2	111.9	285.9	270.7	560.0	19.1	18.6	217.5
New England.....	48	27	4.3	33.3	2.5	5.4	17.5	59.6	42.0	101.4	1.8	4.5	52.6
Middle Atlantic.....	78	35	7.1	58.9	4.4	9.5	33.3	96.5	89.1	186.5	7.8	5.8	72.7
New York.....	37	14	2.7	21.7	1.6	3.6	12.4	42.1	38.6	80.1	0.9	2.5	32.0
New Jersey.....	21	10	2.6	22.3	1.6	3.2	11.8	36.7	29.6	65.0	1.7	1.9	24.8
Pennsylvania.....	20	11	1.8	14.9	1.2	2.7	9.1	17.8	20.9	41.4	5.2	1.4	15.9
North Central.....	49	26	7.8	63.0	6.0	12.3	47.8	95.1	114.8	213.5	7.1	7.0	79.6
Ohio.....	12	6	1.5	12.4	0.9	2.0	7.5	15.3	25.5	41.2	1.8	1.4	17.2
South.....	24	12	1.5	11.9	1.1	2.4	7.5	20.8	15.4	35.3	2.0	0.8	6.9
South Atlantic.....	13	8	1.2	10.1	0.9	2.0	6.2	17.3	12.4	29.0	1.3	(D)	(D)
Pacific.....	19	8	1.0	7.9	0.7	1.5	5.8	13.8	9.5	23.3	0.3	0.5	5.5
California.....	11	3	0.3	2.8	0.3	0.5	2.2	5.1	2.5	7.4	0.1	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3554- --	PAPER INDUSTRIES MACHINERY, TOTAL.....		(X)	515.0	(X)	347.6
35540 11	Pulp and paper industries machinery (new): Wood preparation equipment (including barkers, chippers, knotters, splitters, chipscreens, etc.).....		(X)	10.7	(X)	2.2
35540 21	Pulpmill machinery: Grinders (for groundwood).....	No. of units..	43.0	11.0	325	7.4
35540 25	Deckers, thickeners, wet lap machines, bleaching equipment, pulp screens, washers, and savealls.....		(X)	29.1	(X)	21.0
35540 29	Other pulpmill machinery including digesters and recovery room equipment.....		(X)	9.7	(X)	6.2
35540 31	Papermill machinery: Beaters, jordan, and other stock preparation.....		(X)	18.7	(X)	20.3
35540 45	Paper machines: Calenders including supercalenders.....	No. of units..	69	7.5	49	6.0
35540 41	Fourdriniers, including yankee machines.....				45	49.5
35540 43	Cylinder type machines.....		(X)	154.0	(X)	41.8
35540 49	Other paper machinery, including forming and finishing machinery, but excluding calenders.....					
35540 51	Paper and paperboard converting equipment: Bagmaking machines, including shipping sack machines, and envelope making machines.....	No. of units..	1,034	21.9	817	9.0
35540 53	Corrugated boxmaking machines.....	do.....	1,920	36.0	1,234	24.7
35540 54	Box, carton, and shipping container making machines (except corrugated box machines).....	do.....	(NA)	29.4	1,025	13.1
35540 56	Toilet roll and napkin making machines.....	do.....	257	13.1	129	7.0
35540 59	Other paper and paperboard converting equipment, including drum, can, and tube making machines.....		(X)	34.6	(X)	32.9
35540 71	Rebuilt pulp and paper industries machinery: Rebuilt paper machines including fourdriniers, yankees, cylinders, and forming machines.....		(X)	43.9	(X)	51.1
35540 75	Other rebuilt pulp and paper industries machinery.....		(X)	2.4	(X)	2.0
35540 81	Parts and attachments for pulpmill, papermill, and paper con- verting machinery and equipment (sold separately).....		(X)	69.3	(X)	44.8
35540 00	Paper industries machinery, n.s.k. (For companies with 10 or more employees. See Note.).....		(X)	21.1		
35540 02	Paper industries machinery, n.s.k. (For companies with less than 10 employees. See Note.).....		(X)	2.6	(X)	8.4

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

## 1967 CENSUS OF MANUFACTURES

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963			
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)		
	INDUSTRY 3554.--PAPER INDUSTRIES MACHINERY							
	Materials, parts, containers, and supplies, total.....		(X)	226.5	(X)	165.6		
	Mill shapes and forms (except castings)							
	Carbon steel:							
331011	Bars and shapes.....	1,000 short tons..	23.0	6.1	19.8	4.8		
331013	Plates.....	..do.....	42.1	7.3	21.9	3.7		
331019	All other carbon steel mill shapes and forms.....	..do.....	11.1	3.4	7.2	2.0		
331020	Alloy steel (except stainless).....	..do.....	3.7	1.6	2.4	1.1		
331031	Stainless steel.....	..do.....	4.4	10.3	5.2	9.6		
	Copper and copper-base alloy:							
335102	Rod, bar, and mechanical wire including extruded and/or drawn shapes.....	Million lbs.....	} (NA)	9.1	{ 2.3	3.2		
335123	Plate, sheet, and strip (including military cups and discs).. Pipe and tube.....	..do.....					1.2	2.2
335127		..do.....					0.6	0.3
	Primary metals and scrap:							
331051	Pig iron, excluding silvery iron.....	1,000 short tons..	( <sup>1</sup> )	( <sup>1</sup> )	50.4	2.9		
999811	Iron and steel scrap (excluding home scrap).....	..do.....	( <sup>1</sup> )	( <sup>1</sup> )	13.9	1.0		
	Castings (rough and semifinished): <sup>2</sup>							
332011	Iron (gray malleable).....	..do.....	29.6	11.7	15.6	6.2		
332300	Steel.....	..do.....	4.7	3.9	2.9	2.6		
362120	Integral horsepower electric motors and generators (1 hp. and over) <sup>2</sup> .....	1,000.....	20.0	13.3	8.3	5.4		
	Bearings:							
356218	Ball.....		(X)	5.5	(X)	3.2		
356201	Roller.....		(X)	1.9	(X)	0.9		
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	123.9	(X)	104.8		
972000	Materials, etc., n.s.k. <sup>3</sup> .....		(X)	28.5	(X)	11.4		

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Included with material code 970099 "All other material and components, etc." to avoid disclosing figures for individual companies.<sup>2</sup>Data are not available for castings or electric motors and generators produced and consumed in the same establishment except for iron castings which totaled 31.4 thousand short tons in 1963.<sup>3</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3554, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

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## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

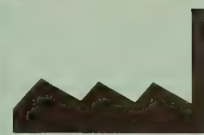
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

### Printing trades machinery

SIC Code 3555

**preliminary  
report**

The Printing Trades Machinery and Equipment Industry includes establishments primarily engaged in manufacturing machinery and equipment used by the printing and bookbinding trades. Establishments primarily engaged in manufacturing textile printing machinery are classified in industry 3552.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Printing Trades Machinery Industry amounted to \$750.9 million, an increase of

68 percent compared with 1963. Value added by manufacture at \$458.0 million in 1967 was 60 percent more than value added in 1963. Average employment in the industry showed an increase of 26 percent from 1963 to a total of 29.1 thousand employees in 1967.

Of the \$750.9 million total value of shipments and other receipts of establishments classified as printing trades machinery, \$18 million were products primary to other industries; and \$115 million were receipts for miscellaneous activities. The industry shipments of primary products represented 97 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 95 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3555.--PRINTING TRADES MACHINERY														
1967 Census....	519	164	29.1	239.2	20.1	42.1	148.8	458.0	324.1	750.9	32.9	217.5	97	95
1966 ASM <sup>1</sup> .....	(NA)	(NA)	27.1	213.6	18.6	39.7	134.7	399.2	262.9	649.1	15.2	171.0	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	25.5	188.5	17.9	38.1	122.6	345.8	229.1	565.0	20.9	152.2	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	23.5	170.9	16.4	35.2	111.2	311.4	199.9	502.9	8.3	142.1	(NA)	(NA)
1963 Census....	490	136	23.0	159.4	16.4	34.3	104.4	285.9	170.7	448.4	8.9	129.2	95	92
1962 ASM <sup>1</sup> .....	(NA)	(NA)	23.6	159.9	16.5	34.4	99.9	288.5	166.6	460.0	*13.7	112.8	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	23.2	151.0	16.3	33.3	96.8	270.1	159.6	420.8	9.6	111.7	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	22.2	143.0	15.6	32.5	92.3	246.7	151.5	399.4	10.2	109.2	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	20.8	128.0	14.6	31.0	82.2	220.2	128.0	342.9	5.8	101.8	(NA)	(NA)
1958 Census <sup>2</sup> ...	442	119	21.5	119.6	15.3	30.0	78.0	188.9	111.7	309.8	8.5	97.0	95	92

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director

The total value of printing trades machinery shipped by all producers in 1967 was \$648.1 million of which \$618 million, or 95 percent, were shipped by plants classified in industry 3555, Printing Trades Machinery, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 92 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3555.--PRINTING TRADES MACHINERY												
United States, total.....	519	164	29.1	239.2	20.1	42.1	148.8	458.0	324.1	750.9	32.9	23.0	285.9
New England.....	45	17	3.4	27.8	2.5	5.2	17.1	48.3	42.9	92.6	3.3	2.0	23.6
Massachusetts.....	25	10	1.6	12.5	1.2	2.1	7.2	14.6	27.1	43.3	0.9	(D)	(D)
Middle Atlantic.....	192	61	11.6	96.0	8.3	17.5	63.0	204.1	119.8	307.5	13.8	9.7	119.9
New York.....	105	27	6.5	55.7	4.7	9.7	37.0	111.7	60.6	165.3	2.9	5.4	71.7
New Jersey.....	60	21	2.8	23.4	1.9	4.3	14.9	57.2	37.0	86.2	7.1	2.4	28.5
Pennsylvania.....	27	13	2.3	17.0	1.6	3.5	11.0	35.2	22.2	56.0	3.8	1.9	19.7
East North Central...	140	53	10.2	86.8	7.1	14.7	55.6	148.0	122.4	266.9	7.2	8.7	110.1
Wisconsin.....	8	3	0.2	1.6	0.1	0.3	0.9	3.2	1.7	4.5	(Z)	(D)	(D)
West North Central...	34	8	1.7	12.7	0.9	1.9	5.1	23.3	17.1	37.9	1.8	0.9	9.7
Missouri.....	16	1	0.7	4.7	0.2	0.4	1.3	6.5	8.0	14.0	0.5	0.5	5.6
South.....	62	15	1.4	9.8	0.9	1.8	5.1	23.0	15.9	30.4	6.0	0.6	12.0
Maryland.....	11	3	0.1	0.8	0.1	0.1	0.6	1.3	1.4	2.7	(Z)	(D)	(D)
Georgia.....	6	2	0.1	0.5	0.1	0.1	0.3	1.0	0.4	1.5	(Z)	(D)	(D)
West South Central...	19	5	0.8	5.8	0.4	0.8	2.3	12.7	11.9	16.1	(D)	0.3	8.1
Texas.....	14	5	0.7	5.6	0.4	0.8	2.2	11.8	11.5	14.8	(D)	0.2	7.6
West.....	46	10	0.7	6.0	0.4	0.9	3.0	11.4	5.9	15.7	0.8	1.1	10.6

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3555- --	PRINTING TRADES MACHINERY, TOTAL.....		(X)	648.1	(X)	403.2
35551 --	Printing presses, total.....		(X)	263.5	(X)	137.6
35551 16	Letterpress (typographical, relief): Sheet-fed, including platen cylinder and rotary types.....	No. of complete presses.....	1,149	6.6	752	5.0
35551 18	Roll or web-fed: Rotary letterpress.....	..do.....	569	50.6	235	29.8
35551 19	Newspaper high-speed rotary and flat-bed and high-speed platen.....	..do.....				
	Offset lithographic: Sheet-fed: Single color: Up to and including 23 inch by 30 inch.....	..do.....				
35551 23	Over 23 inch by 30 inch.....	..do.....	(NA)	9.4	535	7.3
35551 26	Multicolor.....	..do.....	(NA)	2.5	121	3.6
35551 27	Web-fed: Newspaper type.....	..do.....	450	59.4	275	27.8
35551 32	Periodical, catalogue, etc., type (heat-set).....	..do.....	375	55.7	358	31.6
35551 34	All other types.....	..do.....	71	6.0		
35551 36	Gravure, sheet-fed and web-fed.....	..do.....	(NA)	21.7	165	9.7
35551 37	Flexographic, sheet-fed and web-fed.....	..do.....	77	15.1	42	6.6
35551 38	Other printing presses, including proof and rebuilt.....	..do.....	158	10.7	(NA)	15.4
35551 41	Printing presses, n.s.k.....	..do.....	(NA)	24.7		
35551 00	Other printing trades machinery, including parts and attachments, total.....	..do.....	(X)	1.1	(X)	0.7
35552 --	Typesetting machinery and equipment (excluding justifying typewriters): Photographic typesetting machines: Electronically controlled (keyboard or tape driven).....	No. of units..	(X)	348.1	(X)	243.8
35552 43	Manually controlled.....	..do.....	(NA)	24.9	3,189	13.3
35552 45	Matrices, including matrices for hot metal machines and photo-typesetting.....	..do.....	2,985	13.7		
35552 55	Typesetting and type casting machines, including hot metal (excluding photographic); other typesetting equipment, including tape perforators, operating units, etc. (excluding cameras).....	..do.....	(X)	21.4	(X)	17.8
35552 57	Electrotyping and stereotyping machinery and equipment.....	..do.....	(X)	34.3	(X)	29.2
35552 62	Photoengraving and lithographing platemaking equipment (except cameras).....	..do.....	(X)	7.1	(X)	7.7
35552 65	Paper cutting machines.....	..do.....	(X)	6.6	(X)	5.8
35552 66	Collating or gathering machines.....	..do.....	(X)	12.3	(X)	7.7
35552 67	Bookbinding machinery and equipment, except paper cutting and collating or gathering machines.....	..do.....	(X)	18.6	(X)	21.8
35552 68	Engravers' materials and equipment, including metal plates, wood blocks, lithographic stones, etc.....	..do.....	(X)	30.8		
35552 69	Other printing machinery and equipment, including parts, attachments, and accessories for printing trades machinery and equipment (sold separately): Ink rollers and printers' rolls and platens.....	..do.....	(X)	13.6	(X)	11.1
35552 72	Foundry type, rules, leads, slugs, borders, and ornaments.....	..do.....	(X)	40.3	(X)	28.2
35552 75	Parts, attachments, and accessories for printing trades machinery and equipment (sold separately).....	..do.....	(X)	4.9	(X)	4.5
35552 81	Other printing machinery and equipment.....	..do.....	(X)	56.0	(X)	42.2
35552 98	Other printing trades machinery, including parts and attachments, n.s.k.....	..do.....	(X)	59.7	(X)	52.7
35552 00	Printing trades machinery, n.s.k. (For companies with 10 or more employees. See Note.).....	..do.....	(X)	3.9	(X)	1.8
35550 00	Printing trades machinery, n.s.k. (For companies with less than 10 employees. See Note.).....	..do.....	(X)	24.6	(X)	21.8
35550 02	Printing trades machinery, n.s.k. (For companies with less than 10 employees. See Note.).....	..do.....	(X)	11.9		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3555.-- PRINTING TRADES MACHINERY					
	Materials, parts, containers, and supplies, total.....		(X)	234.3	(X)	123.2
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons..	23.2	7.4	18.2	5.1
331012	Sheet and strip.....	..do.....	3.8	1.0	2.4	0.5
331013	Plates.....	..do.....	4.6	1.7	2.5	0.6
331019	All other carbon steel mill shapes and forms.....	..do.....	14.2	1.4	3,644	1.3
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	..do.....	(NA)	1.4	1.8	0.8
331029	All other alloy steel mill shapes and forms.....	..do.....			0.4	0.2
331031	Stainless steel.....	..do.....	0.5	0.6	0.4	0.9
	Copper and copper-base alloy:					
335790	Insulated wire and cable.....	Million lbs. (copper content).	(D)	(D)	0.1	(Z)
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	(NA)	1.6	0.4	0.2
335123	Plate, sheet, and strip (including military cups and discs).	..do.....			2.6	1.2
335127	Pipe and tube.....	..do.....	( <sup>2</sup> )	( <sup>2</sup> )	0.2	0.1
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	..do.....	5.7	3.6	3.2	1.6
335209	All other aluminum mill shapes and forms.....	..do.....			0.8	0.6
	Castings (rough and semifinished): <sup>3</sup>					
332011	Iron (gray and malleable).....	1,000 short tons..	66.6	28.8	33.2	13.5
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	2.6	2.9	1.9	2.1
	Electrical motors and generators: <sup>3</sup>					
362115	Fractional horsepower electric motors (under 1 hp.) excluding timing motors.....	1,000.....	61.6	2.5	29.6	1.1
362120	Integral horsepower motors and generators (1hp. and over).....	..do.....	13.1	6.6	9.0	4.5
	Bearings:					
356218	Ball.....	..do.....	(X)	5.0	(X)	1.9
356201	Roller.....	..do.....			(X)	1.1
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	117.0	(X)	58.9
973000	Materials, containers, supplies, n.s.k. <sup>4</sup> .....		(X)	53.4	(X)	26.9

(D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or from related figures.

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable. (Z) Less than 0.1 when rounded.

<sup>1</sup>These figures are understated by \$5 million or less because of apparent undercoverage of carbon steel pipe and tube.

<sup>2</sup>Included with material code 970099 "All other materials and components, etc."

<sup>3</sup>No data are available for castings or electric motors and generators for quantities produced and consumed in the same establishment except the following for 1963: iron castings (3.3), aluminum castings (0.1) and fractional horsepower electric motors excluding timing motors (0.5).

<sup>4</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3555, these small establishments accounted for approximately 1 percent of payrolls and 2 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

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**WASHINGTON, D.C. 20233**

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**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

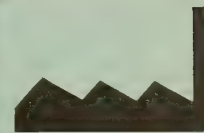
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

## preliminary report

### Special industry machinery, n.e.c.

SIC Code 3559

The Special Industry Machinery, Not Elsewhere Classified, Industry includes establishments primarily engaged in manufacturing special industry machinery, not elsewhere classified, such as smelting and refining equipment, cement making, clay working, cotton ginning, glass making, hat making, incandescent lamp making, leather working, paint making, rubber working, cigar and cigarette making, tobacco working, shoe making, and stone working machinery.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classi-

fied in the Special Industry Machinery, N.E.C., Industry amounted to \$1,800 million, an increase of 77 percent compared with 1963. Value added by manufacture at \$1,026.8 million in 1967 was 80 percent more than value added in 1963. Average employment in the industry showed an increase of 44 percent from 1963 to a total of 71.6 thousand employees in 1967.

Of the \$1,800 million total value of shipments and other receipts of establishments classified as special industry machinery, n.e.c., \$270 million were products primary to other industries; and \$204 million were receipts for miscellaneous activities. The industry shipments of primary products represented 83 percent of the total

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3559. --SPECIAL INDUSTRY MACHINERY, N. E. C.														
1967 Census....	1,118	477	71.6	576.3	46.0	97.1	321.0	1,026.8	796.5	1,800.0	74.0	442.3	83	82
1966 ASM <sup>1</sup> .....	(NA)	(NA)	69.5	536.1	46.7	103.9	322.5	981.7	790.1	1,731.2	68.6	403.7	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	61.2	440.2	41.3	90.5	269.8	805.0	639.3	1,409.8	41.1	311.8	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	55.2	381.4	38.3	81.3	235.9	699.8	518.2	1,203.0	*35.2	264.5	(NA)	(NA)
1963 Census.....	1,092	388	50.2	330.1	34.1	70.9	199.4	572.2	443.9	1,015.0	22.5	235.8	83	74
1962 ASM <sup>1</sup> .....	(NA)	(NA)	48.9	313.6	34.0	68.3	189.3	527.6	433.9	961.7	17.7	226.8	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	50.7	314.0	35.0	68.9	187.4	512.5	435.2	960.6	20.0	228.3	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	53.4	323.0	36.8	75.5	197.0	532.6	436.7	955.9	21.6	234.7	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	51.3	299.2	35.3	72.5	182.9	494.8	398.3	873.6	17.2	229.9	(NA)	(NA)
1958 Census <sup>2</sup> ...	1,048	388	50.8	273.7	34.0	67.3	163.5	431.1	320.1	761.1	17.4	204.2	83	77

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 2, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director



manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was also 83 percent in 1963.

The total value of special industry machinery, n.e.c., shipped by all producers in 1967 was \$1,624.0 million of which \$1,326 million, or 82 percent, were shipped by plants classified in industry 3559, Special Industry Machinery, N.E.C., while the remainder was shipped by plants classified in other industries. This percent,

called the coverage ratio, was 74 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3559. --SPECIAL INDUSTRY MACHINERY, N.E.C.													
United States, total.....	1,118	477	71.6	576.3	46.0	97.1	321.0	1,026.8	796.5	1,800.0	74.0	50.2	572.2
New England.....	123	54	11.8	95.6	7.6	16.6	55.0	157.6	103.8	261.7	8.3	8.0	84.4
Massachusetts.....	70	33	7.6	60.8	4.8	10.7	34.8	98.9	54.6	151.9	4.9	5.1	47.0
Connecticut.....	34	14	3.1	27.5	2.1	4.4	15.6	49.0	41.3	91.4	2.8	2.5	34.8
Middle Atlantic.....	277	125	20.3	164.2	12.6	26.5	89.0	282.9	217.6	496.9	19.1	13.0	150.2
New York.....	85	31	7.5	63.6	4.3	8.7	32.5	95.9	68.0	165.4	6.7	3.9	48.6
New Jersey.....	106	50	5.8	46.2	3.9	8.3	27.0	83.4	66.6	148.6	5.4	5.1	56.3
Pennsylvania.....	86	44	7.0	54.4	4.4	9.5	29.5	103.7	83.0	182.9	6.9	4.1	45.3
East North Central....	337	161	22.1	178.6	14.9	31.5	108.6	344.6	280.3	617.2	18.6	16.9	203.3
Ohio.....	119	59	8.9	69.4	6.0	12.8	41.4	119.1	116.2	236.6	7.1	8.2	96.5
Indiana.....	33	13	4.8	39.7	3.3	6.9	25.3	78.4	42.3	117.1	4.3	2.0	21.2
Illinois.....	88	40	3.7	31.3	2.4	5.0	18.7	66.6	42.0	102.3	3.1	2.9	34.8
Michigan.....	72	39	3.8	31.6	2.5	5.5	18.9	67.8	71.3	140.3	3.6	3.0	39.5
Wisconsin.....	25	10	0.9	6.5	0.6	1.3	4.2	12.8	8.5	21.0	0.4	0.8	11.4
West North Central....	52	21	1.5	11.0	1.1	2.4	7.0	25.5	15.5	40.7	1.2	1.4	15.7
Minnesota.....	13	8	0.5	4.4	0.4	0.8	2.6	10.6	4.9	15.3	0.4	0.3	3.5
Missouri.....	17	3	0.2	1.2	0.1	0.3	0.9	2.2	1.6	3.8	0.1	0.4	3.5
South Atlantic.....	66	33	4.6	35.5	3.0	6.2	18.7	52.3	49.5	103.2	(D)	3.8	38.7
Virginia.....	8	5	0.3	2.2	0.2	0.5	1.5	4.7	2.1	6.6	(D)	0.2	1.6
West Virginia.....	5	3	0.2	1.1	0.2	0.3	0.9	3.0	0.8	3.8	(D)	(D)	(D)
North Carolina.....	7	6	0.6	4.1	0.5	1.0	2.5	8.6	6.6	16.5	(D)	0.6	5.2
East South Central....	33	14	1.9	12.0	1.4	2.7	7.6	22.1	18.3	37.6	2.6	1.5	17.5
Kentucky.....	13	8	0.7	4.7	0.5	1.0	3.0	10.0	9.2	18.3	0.2	(D)	(D)
West South Central....	65	25	3.0	20.6	2.0	4.6	12.6	35.6	25.2	60.9	3.1	2.8	27.4
Texas.....	48	19	2.3	15.7	1.5	3.5	9.4	24.0	19.0	43.5	(D)	2.3	21.0
West.....	165	44	6.5	58.9	3.4	6.7	22.5	106.1	86.3	181.7	(D)	2.8	35.0
Oregon.....	11	3	0.4	2.5	0.2	0.5	1.5	4.0	3.9	7.8	0.1	0.3	4.2
California.....	126	33	5.3	50.3	2.6	5.3	18.0	91.7	71.0	151.6	(D)	1.9	25.0

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.  
n.e.c. Not elsewhere classified.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3559- --	SPECIAL INDUSTRY MACHINERY, N.E.C., TOTAL.....		(X)	1,624.0	(X)	988.4
35591 11	Chemical manufacturing industries machinery and equipment and parts.....		(X)	283.3	(X)	152.4
35592 --	Foundry machinery and equipment, excluding patterns and molds, total.....		(X)	140.5	(X)	89.6
35592 21	Foundry pouring equipment, including ladles, crucibles, and pouring machines.....		(X)	24.9	(1)	(1)
35592 31	Molding machines.....	No. of units..	(NA)	17.1	1,240	15.5
35592 51	Blast cleaning equipment.....		(X)	36.7	(X)	22.9
35592 98	Other foundry machinery, including core-making machines and parts for foundry machinery and equipment.....		(X)	59.8	(X)	150.7
35592 00	Foundry machinery and equipment, excluding patterns and molds, n.s.k.....		(X)	2.0	(X)	0.5
35593 --	Plastics-working machinery and equipment, excluding patterns and molds, total.....		(X)	240.8	(X)	137.1
35593 11	Compression molding machines.....	No. of units..	(NA)	13.8	795	4.8
35593 33	Extrusion machines.....	do.....	2,547	46.3	1,062	18.6
35593 51	Injection molding machines.....	do.....	3,629	79.1	2,511	54.8
35593 61	Blow molding machines.....	do.....	(NA)	12.9		
35593 98	Other plastics-working machinery and equipment, including parts for plastics-working machinery.....		(X)	82.9	(X)	58.5
35593 00	Plastics-working machinery and equipment, excluding patterns and molds, n.s.k.....		(X)	5.8	(X)	0.4
35594 --	Rubber-working machinery and equipment, excluding tire molds, total.....		(X)	116.6	(X)	76.8
35594 11	High-intensity solid mixers.....		(X)	11.6	(X)	8.3
35594 31	Extruding machines.....	No. of units..	245	6.5	378	3.6
35594 41	Vulcanizing presses.....	do.....	1,017	19.9	969	19.2
35594 51	Tire-building equipment (except tire molds).....		(X)	17.1	(X)	7.5
35594 71	Tire recapping and repairing machinery and equipment, including recapping vulcanizers.....		(X)	20.3	(X)	15.4
35594 98	Other rubber-working machinery including calendaring machines and parts for rubber-working machinery, but excluding tire molds.....		(X)	38.3	(X)	21.6
35594 00	Rubber-working machinery and equipment, excluding tire molds, n.s.k.....		(X)	2.9	(X)	1.1
35595 --	Other special industry machinery and equipment, total <sup>2</sup> .....		(X)	745.7	(X)	500.2
35595 11	Petroleum refinery machinery and equipment, including parts.....		(X)	55.1	(X)	36.5
35595 21	Ammunition and explosives loading machinery and equipment, including parts.....		(X)	4.3	(3)	(3)
35595 35	Tobacco manufacturing machinery and equipment: Cigarette- and cigar-making machines and cigarette, cigar, and tobacco packaging and wrapping machines.....	No. of units..	990	6.9	762	5.3
35595 39	Other tobacco manufacturing machinery and equipment and parts		(X)	6.0	(X)	7.7
35595 41	Clayworking machinery and equipment and parts (brick, tile, and ceramics).....		(X)	16.5	(X)	11.4
35595 43	Cementmaking machinery and equipment and parts, other than cement kilns.....		(X)	8.1	(X)	8.5
35595 45	Concrete block machines.....	No. of units..	735	7.3	345	5.4
35595 49	Concrete products machinery and equipment: Other concrete products machinery and equipment and parts, including concrete-pipemaking machines.....		(X)	32.0	(X)	27.8
35595 51	Glass making machinery and equipment: Bottle-forming machines.....	No. of units..	224	11.4	229	10.8
35595 55	Other glassmaking machinery and equipment and parts, except lehrs.....		(X)	33.6	(X)	25.2
35595 62	Shoemaking and repairing machinery and equipment and parts, including sole stitching machines.....		(X)	35.3	(X)	26.8
35595 73	Cotton-ginning machinery and equipment and parts.....		(X)	18.7	(X)	41.1
35595 81	Metal cleaning, degreasing, finishing, and drying machinery and equipment and parts.....		(X)	86.7	(X)	47.2
35595 85	Electronic tubemaking machinery and equipment and parts.....		(X)	10.4	(X)	9.1
35595 89	Other special industrial machinery and equipment and parts (including incandescent lampmaking, paintmaking, stoneworking, hatmaking, leatherworking, jewelers', pharmaceutical, etc.).....		(X)	298.5	(X)	3171.3
35595 91	Electric nonmetallic processing industrial furnaces and ovens, including kilns and lehrs.....		(X)	16.2	(X)	9.0
35595 92	Fuel-fired kilns (cement, wood, and chemical processing).....	No. of units..	427	30.0	380	21.9
35595 93	Other nonmetallic processing industrial furnaces and ovens and parts, including kilns and lehrs.....		(X)	20.6	(X)	10.5
35595 00	Other special industry machinery and equipment, n.s.k.....		(X)	48.1	(X)	24.8

See footnotes at end of table.

## 1967 CENSUS OF MANUFACTURES

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3559- --	SPECIAL INDUSTRY MACHINERY, N.E.C.—Continued					
35590 00	Special industry machinery, n.s.k. (For companies with 10 or more employees. See Note.)		(X)	79.2	(X)	32.2
35590 02	Special industry machinery, n.s.k. (For companies with less than 10 employees. See Note.)		(X)	17.9		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.e.c. Not elsewhere classified. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>1963 data for product code 35592 21, foundry pouring equipment, including ladles, crucibles, and pouring machines are included with product code 35592 98, other foundry machinery, etc.

<sup>2</sup>Some equipment in this product class may be based rather than sold outright. For based equipment, estimates of the value of products produced were reported. These estimates approximate the value of the products had they been sold outright and are based on market values of the products, tax or insurance valuations, etc.

<sup>3</sup>1963 data for product code 35595 21, ammunition and explosives loading machinery and equipment are included with product code 35595 89, other special industry machinery and equipment, etc.



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3559.--SPECIAL INDUSTRY MACHINERY, N.E.C.					
	Materials, parts, containers, and supplies, total.....		(X)	647.0	(X)	355.9
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons	69.8	15.7	52.8	11.4
331012	Sheet and strip.....	..do.....	46.9	8.4	34.4	6.3
331013	Plates.....	..do.....	100.5	18.1	73.9	12.7
331015	Structural shapes.....	..do.....	40.1	7.4	23.4	4.3
331017	Wire and wire products.....	..do.....	(NA)	2.2	3.8	1.6
331019	All other carbon steel mill shapes and forms.....	..do.....	21.3	5.5	16.4	3.6
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	..do.....	12.2	6.5	8.7	4.1
331029	All other alloy steel mill shapes and forms.....	..do.....	(NA)	5.9	4.5	1.7
331031	Stainless steel.....	..do.....	21.9	30.0	8.2	12.0
	Copper and copper-base alloy:					
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	2.9	2.7	1.5	1.0
335123	Plate, sheet, and strip, (including military cups and discs)	..do.....	(NA)	2.7	1.2	0.9
335127	Pipe and tube.....	..do.....	(2)	(2)	2.0	1.5
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	..do.....	3.8	2.5	1.9	1.0
335205	Extruded shapes (including extruded rod, bar, pipe, tube, etc.).....	..do.....	1.3	1.0	1.3	1.0
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	..do.....	2.3	1.2	2.3	0.9
	Primary metals and scrap:					
331051	Pig iron, excluding silvery iron.....	1,000 short tons	(3)	(3)	21.3	1.7
999811	Iron and steel scrap (excluding home scrap).....	..do.....	(3)	(3)	69.5	2.0
	Castings (rough and semifinished): <sup>4</sup>					
332011	Iron (gray and malleable).....	..do.....	44.2	21.2	33.4	14.2
332300	Steel.....	..do.....	31.3	20.0	19.8	11.8
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	(NA)	5.3	3.9	3.3
336200	Copper and copper-base alloy.....	..do.....	3.8	4.0	2.0	2.0
	Electrical motors and generators: <sup>4</sup>					
362115	Fractional horsepower electric motors (under 1 hp.) (excluding timing motors).....	1,000.....	165.4	8.9	53.5	2.1
362120	Integral horsepower motors and generators (1 hp. and over)....	..do.....	94.9	21.6	51.1	11.2
	Bearings:					
356218	Ball.....		(X)	3.8	(X)	3.0
356201	Roller.....		(X)	3.5	(X)	2.4
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	308.1	(X)	178.8
976000	Materials, etc., n.s.k. <sup>5</sup> .....		(X)	140.8	(X)	59.8

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>These figures are understated by \$5 million or less because of apparent undercoverage of carbon steel pipe and tube.<sup>2</sup>Included with material code 970099, "All other materials and components, etc."<sup>3</sup>Included with material code 970099, "All other materials and components, etc." to avoid disclosing figures for individual companies.<sup>4</sup>No data are available for 1967 on the quantities of castings or electric motors and generators produced and consumed in the same establishment.

For 1963 the following data are available: iron castings, (12.8 thousand short tons); steel castings, (0.1 thousand short tons); aluminum castings, (1.6 million pounds); copper castings, (0.2 million pounds); and fractional horsepower electric motors (0.2 thousand).

<sup>5</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3559, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# 1967 CENSUS OF MANUFACTURES



MC67(P)-35E-1

## INDUSTRY SERIES

### Pumps and compressors

SIC Code 3561

**preliminary  
report**

The Pumps, Air and Gas Compressors, and Pumping Equipment Industry includes establishments primarily engaged in manufacturing pumps, compressors, and pumping equipment for general industrial use. Establishments primarily engaged in manufacturing measuring and dispensing pumps for gasoline service station use are classified in industry 3586; and icemaking, refrigerating, and air conditioning units in industry 3585.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Pumps and Compressors Industry

amounted to \$2,224.4 million, an increase of 57 percent compared with 1963. Value added by manufacture at \$1,216.8 million in 1967 was 59 percent more than value added in 1963. Average employment in the industry showed an increase of 30 percent from 1963 to a total of 78.7 thousand employees in 1967.

Of the \$2,224.4 million total value of shipments and other receipts of establishments classified as pumps and compressors, \$299 million were products primary to other industries; and \$246 million were receipts for miscellaneous activities. The industry shipments of primary products represented 85 percent of the total manufactured product shipments, primary and secondary. This

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
INDUSTRY 3561.--PUMPS AND COMPRESSORS														
1967 Census....	663	301	78.7	591.7	50.2	105.3	336.8	1,216.8	1,040.7	2,224.4	63.4	592.1	85	88
1966 ASM <sup>1</sup> .....	(NA)	(NA)	78.7	578.7	50.5	108.6	337.2	1,202.4	1,006.9	2,151.1	62.5	562.8	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	74.0	517.3	47.4	99.6	297.4	1,059.2	879.5	1,873.9	45.1	489.7	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	67.9	457.6	43.0	91.1	263.0	922.6	744.7	1,627.1	31.7	405.9	(NA)	(NA)
1963 Census....	642	267	61.3	395.8	38.9	80.8	224.7	768.8	660.5	1,419.1	28.4	352.1	85	86
1962 ASM <sup>1</sup> .....	(NA)	(NA)	61.6	383.3	38.2	78.6	214.4	681.4	602.0	1,296.7	24.7	297.2	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	59.4	353.6	37.0	75.6	196.2	636.0	569.4	1,229.7	18.5	275.6	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	62.8	360.8	39.7	80.5	206.1	674.1	603.0	1,275.1	26.1	285.5	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	59.4	330.5	38.1	76.4	188.6	624.0	580.7	1,207.6	23.9	269.3	(NA)	(NA)
1958 Census <sup>2</sup> ...	582	243	60.0	321.5	37.4	75.0	180.1	542.0	535.2	1,114.1	24.7	267.0	87	85

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

Harold C. Passer, Assistant Secretary for Economic Affairs

BUREAU OF THE CENSUS George Hay Brown, Director

percent, called the specialization ratio for the industry, was also 85 percent in 1963.

The total value of pumps and compressors shipped by all producers in 1967 was \$1,905.5 million of which \$1,679 million, or 88 percent, were shipped by plants classified in industry 3561, Pumps and Compressors, while the remainder was shipped by plants classified in other industries.

This percent, called the coverage ratio, was 86 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3561, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-35P, Pumps and Compressors.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
	INDUSTRY 3561.--PUMPS AND COMPRESSORS												
United States, total.....	663	301	78.7	591.7	50.2	105.3	336.8	1,216.8	1,040.7	2,224.4	63.4	61.3	768.8
New England.....	32	16	3.6	27.8	2.3	5.0	15.7	61.3	35.0	95.3	2.8	4.2	52.4
Massachusetts.....	16	9	2.4	17.8	1.6	3.5	10.7	38.6	22.3	60.9	2.2	2.3	24.0
Middle Atlantic.....	120	57	25.8	194.3	16.4	34.4	112.5	372.5	347.3	709.4	17.0	19.2	220.4
East North Central...	206	103	28.0	210.5	17.6	36.7	118.7	429.8	322.4	740.6	26.0	22.3	286.8
Ohio.....	53	30	11.4	84.0	7.1	14.6	47.4	168.7	121.7	285.1	9.1	9.0	104.0
Indiana.....	20	9	2.4	16.6	1.5	3.0	9.2	39.1	35.8	73.4	1.4	2.3	27.6
Illinois.....	55	32	8.4	61.7	5.4	11.5	34.7	132.5	94.1	222.1	10.9	6.3	97.6
Michigan.....	44	18	2.6	20.0	1.7	3.4	10.8	38.6	26.0	63.4	2.3	1.9	24.0
Wisconsin.....	34	14	3.3	28.2	1.9	4.2	16.6	50.9	44.8	96.7	2.3	2.9	33.7
West North Central...	43	24	6.1	43.9	4.2	8.7	27.3	116.4	63.9	178.2	5.3	4.1	65.4
Minnesota.....	10	5	1.8	13.7	1.2	2.5	7.7	30.1	17.4	46.9	1.4	(D)	(D)
Iowa.....	9	5	0.9	6.7	0.6	1.2	3.7	13.3	9.8	22.7	0.5	0.8	9.7
Missouri.....	6	3	0.3	2.2	0.2	0.4	1.4	4.3	3.9	8.1	(D)	1.2	14.9
South.....	131	54	8.2	57.5	5.8	12.2	34.7	132.9	133.6	260.4	6.6	5.2	64.1
Florida.....	17	4	0.2	1.5	0.1	0.3	0.9	3.5	2.6	5.8	(Z)	0.3	2.9
West South Central...	79	42	5.9	42.7	4.1	8.7	24.9	88.3	105.7	187.6	5.2	3.9	51.1
Oklahoma.....	20	13	2.4	16.4	1.6	3.4	9.3	34.3	32.0	64.6	1.5	1.5	17.4
Texas.....	50	25	2.9	21.2	2.1	4.5	13.4	49.7	57.5	103.3	3.3	2.1	30.7
Mountain.....	18	7	0.7	5.5	0.4	0.9	2.7	10.3	16.4	27.9	0.5	0.4	7.6
Pacific.....	113	40	6.3	52.2	3.7	7.6	25.4	93.6	122.2	212.6	5.1	5.9	72.1

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Value of total shipments including interplant transfers (million dollars)	
		1967	1963
3561- --	PUMPS AND COMPRESSORS, TOTAL.....	1,905.5	1,249.2
35611 --	Industrial pumps, except hydraulic fluid power pumps:		
	As reported in the census of manufactures <sup>1</sup> .....	435.7	321.9
	As reported on Census Form MA-35P <sup>1</sup> .....	448.8	320.8
35612 --	Hydraulic fluid power pumps and motors and vacuum pumps:		
	As reported in the census of manufactures <sup>1</sup> .....	216.6	134.9
	As reported on Census Form MA-35P <sup>1</sup> .....	210.4	134.0
35613 --	Domestic water systems, hand and windmill pumps, pump jacks, and cylinders for domestic water systems.....	140.3	83.7
35614 --	Air and gas compressors, except refrigeration compressors:		
	As reported in the census of manufactures <sup>1</sup> .....	480.3	292.3
	As reported on Census Form MA-35P <sup>1</sup> .....	470.9	285.9
35615 --	Pumps and compressors, n.e.c., except refrigeration compressors, total.....	197.5	148.0
35615 19	Products included in the census of manufactures and on Census Annual Form MA-35P:		
	As reported in the census of manufactures <sup>1</sup> .....	120.2	86.9
	As reported on Census Form MA-35P <sup>1</sup> .....	108.6	77.0
35615 31	Industrial spraying equipment:		
	Power paint-spraying outfits and liquid power sprayers, except agricultural types.....	70.0	54.2
35615 51	Hand sprayers, except agricultural and flame types.....	1.3	1.9
35615 00	Pumps and compressors, n.e.c., n.s.k.....	6.0	5.0
35616 11	Parts and attachments for pumps, air and gas compressors, and pumping equipment.....	367.4	250.1
35610 00	Pumps and compressors, n.s.k. (For companies with ten or more employees. See Note.).....	58.3	18.4
35610 02	Pumps and compressors, n.s.k. (For companies with less than ten employees. See Note.).....	9.4	

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.e.c. Not elsewhere classified. n.s.k. Not specified by kind.

<sup>1</sup>For these products, data were also collected in the Census Commodity Survey Program. In lieu of asking for detailed statistics on these products in the census of manufactures, respondents were asked to report only value of shipments for specified classes of products for which separate figures had previously been collected on the annual, quarterly, or monthly form. In most cases, the value figures reported in the census of manufactures for each class of product agreed closely with the corresponding figures reported in the commodity surveys. However, there were some differences between the census figures and the commodity survey figures. These variations were due primarily to the following reasons:

- Use of different reporting periods (calendar year vs. fiscal year).
- Use of different bases for reporting value (company sales vs. factory production).
- Use of estimates in reporting data on the commodity surveys, whereas census of manufactures figures generally represent more exact shipments figures.

See Census Current Industrial Reports Series MA-35P, Pumps and Compressors for detailed product data.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3561.--PUMPS AND COMPRESSORS					
	Materials, parts, containers, and supplies, total.....		(X)	881.8	(X)	570.4
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	43.4	11.2	38.9	8.7
331012	Sheet and strip.....	..do.....	32.9	5.7	33.1	5.7
331013	Plates.....	..do.....	46.5	7.2	34.2	5.6
331015	Structural shapes.....	..do.....	31.7	5.5	12.1	2.1
331019	All other carbon steel mill shapes and forms.....	..do.....	25.4	8.0	26.9	7.4
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	..do.....	21.4	6.8	12.9	4.0
331029	All other alloy steel.....	..do.....	2.3	1.7	3.4	1.6
331031	Stainless steel.....	..do.....	8.2	10.2	5.8	7.3
	Copper and copper-base alloy:					
335790	Insulated wire and cable.....	Million lbs. (copper content)	2.1	1.6	2.2	1.7
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	5.1	3.2	4.4	2.5
335123	Plate, sheet, and strip, including military cups and discs...	..do.....	0.2	0.1	0.7	0.4
335127	Pipe and tube.....	..do.....	9.4	7.3	4.7	3.1
	Aluminum and aluminum-base alloy:					
335205	Extruded shapes (including extruded rod, bar, pipe, tube, etc.).....	..do.....	1.1	0.9	1.2	0.6
335209	All other aluminum mill shapes and forms (sheet, plate, foil, wire, rolled rod and bar, powder, welded tubing, etc.).....	..do.....	0.4	0.3	1.4	1.0
	Primary metals:					
331051	Pig iron excluding silvery iron.....	1,000 short tons.	37.9	2.5	26.2	1.8
333122	Copper and copper-base alloy refinery shapes.....	..do.....	5.7	5.2	5.4	3.1
999811	Iron and steel scrap (excluding home scrap).....	..do.....	61.8	2.6	33.2	1.3
	Castings (rough and semifinished): <sup>1</sup>					
332011	Iron (gray and malleable).....	..do.....	144.5	64.2	115.4	43.1
332300	Steel.....	..do.....	27.1	26.8	11.0	14.5
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	9.2	7.1	5.5	4.5
336200	Copper and copper-base alloy.....	..do.....	14.8	15.7	17.1	13.4
339100	Iron and steel forgings <sup>1</sup> .....	1,000 short tons.	19.1	19.6	8.8	8.8
	Engines: <sup>1</sup>					
351920	Diesel and semidiesel.....	1,000.....	3.7	7.3	2.0	6.5
351901	Gasoline and other carburetor.....	..do.....	(NA)	21.8	104.6	7.9
	Electric motors and generators: <sup>1</sup>					
362115	Fractional h.p. electric motors (under 1 hp.) (excluding timing motors).....	..do.....	1,617.0	28.7	1,421.8	24.6
362120	Integral horsepower motors and generators (1 hp. and over).....	..do.....	369.1	40.6	231.7	26.9
	Bearings:					
356218	Ball.....	..do.....	(X)	7.3	(X)	4.2
356201	Roller.....	..do.....	(X)	5.4	(X)	11.9
970099	All other materials and components, parts, containers, and supplies consumed.....	..do.....	(X)	427.6	(X)	305.0
976000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> .....	..do.....	(X)	128.6	(X)	41.3

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>No data are available for castings, iron and steel forgings, engines or electric motors and generators produced and consumed in the same establishment except for iron castings (code 332011), 77.1 and 54.9 thousand short tons, respectively, in 1967 and 1963; fractional horsepower electric motors, 420.4 thousand units in 1963; and integral horsepower motors and generators, 13.4 thousand units in 1963.<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3561, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

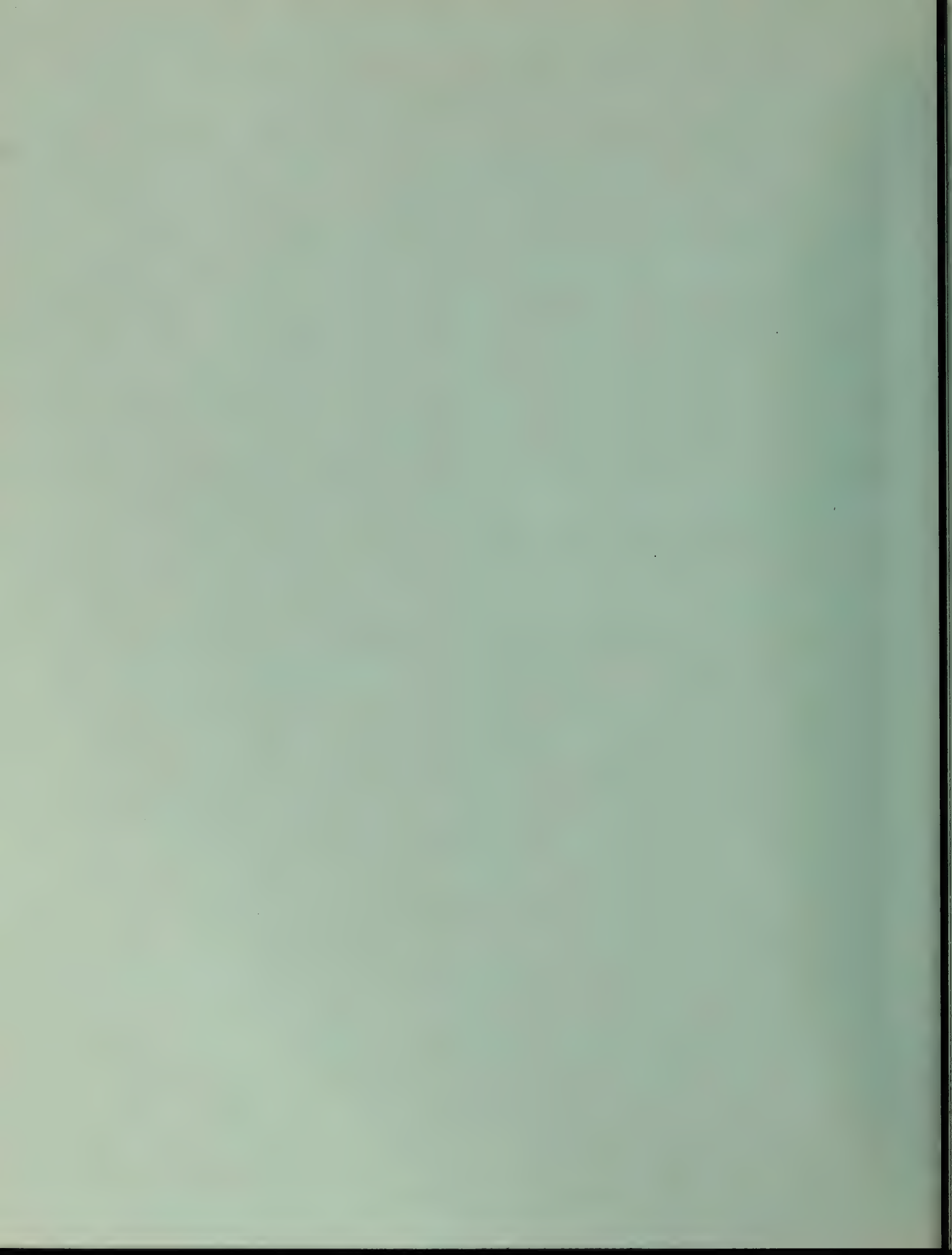
these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--** All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--** This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--** The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--** In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--** The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

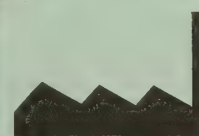
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-35E-2

## INDUSTRY SERIES

**preliminary  
report**

### Ball and roller bearings

SIC Code 3562

The Ball and Roller Bearings Industry includes establishments primarily engaged in manufacturing ball and roller bearings and parts. Establishments primarily engaged in manufacturing bearings, except ball and roller, are classified in industry 3566.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Ball and Roller Bearings Industry amounted to \$1,335.7 million, an increase of 34

percent compared with 1963. Value added by manufacture at \$839.5 million in 1967 was 34 percent more than value added in 1963. Average employment in the industry showed an increase of 13 percent from 1963 to a total of 59,1 thousand employees in 1967.

Of the \$1,335.7 million total value of shipments and other receipts of establishments classified as ball and roller bearings, \$37 million were products primary to other industries; and \$33 million were receipts for miscellaneous activities. The industry shipments of primary products represented 97 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was also 97 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)
INDUSTRY 3562.--BALL AND ROLLER BEARINGS														
1967 Census....	126	99	59.1	457.9	47.6	101.2	344.8	839.5	512.0	1,335.7	107.8	318.8	97	98
1966 ASM <sup>1</sup> .....	(NA)	(NA)	61.4	465.4	49.8	108.0	359.8	872.3	556.7	1,398.9	91.4	305.3	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	57.4	419.9	46.5	99.7	320.6	792.3	501.1	1,270.9	64.9	274.6	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	53.6	384.2	43.2	91.3	294.2	695.1	443.8	1,116.6	44.9	236.2	(NA)	(NA)
1963 Census....	125	93	52.3	348.7	42.0	86.0	263.0	627.7	372.3	998.8	39.2	219.6	97	98
1962 ASM <sup>1</sup> .....	(NA)	(NA)	53.4	348.0	42.5	85.0	249.6	623.5	345.4	962.7	32.9	213.9	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	50.3	306.4	39.6	76.8	215.4	530.4	291.6	824.1	32.3	199.1	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	54.1	315.1	42.6	84.1	225.8	547.6	315.8	865.3	44.9	201.7	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	53.7	325.3	43.4	91.6	243.2	599.8	358.7	920.0	35.5	207.0	(NA)	(NA)
1958 Census <sup>2</sup> ...	107	81	46.4	241.2	35.8	67.3	169.1	407.7	231.3	649.6	34.3	156.9	98	98

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued November 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**

The total value of ball and roller bearings shipped by all producers in 1967 was \$1,296.3 million of which \$1,266 million, or 98 percent, were shipped by plants classified in industry 3562, Ball and Roller Bearings, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was also 98 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
	INDUSTRY 3562.--BALL AND ROLLER BEARINGS												
United States, total.....	126	99	59.1	457.9	47.6	101.2	344.8	839.5	512.0	1,335.7	107.8	52.3	627.7
New England.....	24	22	17.9	138.6	14.6	32.8	104.6	248.6	90.3	332.6	31.6	17.0	182.1
Middle Atlantic.....	40	29	14.9	118.6	11.8	24.0	90.1	211.6	123.0	331.0	22.4	13.5	165.4
North Central.....	39	28	21.8	172.7	17.6	36.6	129.7	312.8	259.3	568.0	44.9	20.0	259.9
Indiana.....	7	7	3.1	23.7	2.2	4.7	16.7	52.9	28.1	77.9	6.4	(D)	(D)
Illinois.....	9	7	3.4	27.5	2.5	5.5	18.6	56.5	34.4	91.1	10.4	2.7	33.9
South.....	16	14	3.6	21.3	3.0	6.4	16.0	54.3	34.4	87.7	7.8	1.2	15.5
South Atlantic.....	12	11	2.7	16.2	2.2	4.8	12.2	43.0	24.0	67.0	6.9	(D)	(D)
California.....	7	6	0.9	6.7	0.7	1.5	4.3	12.2	5.1	16.4	1.1	0.6	4.8

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers		
		1967		1963
		Quantity (million units)	Value (million dollars)	Value (million dollars)
3562- --	BALL AND ROLLER BEARINGS, TOTAL.....	(X)	1,296.3	<sup>1</sup> 961.0
35621 --	Ball bearings, complete, total <sup>2</sup> .....	(X)	475.6	<sup>1</sup> 384.1
	Annular, ground or precision (including self-aligning):			
	Single row conrad:			
	Miniature (below 9mm o.d.):			
35621 03	Regular (BEC 1 and 3).....	35.2	27.8	35.2
35621 05	Precision (BEC 5 and up).....	6.0	14.0	
	Other:			
35621 06	Regular (BEC 1 and 3).....	119.4	209.2	<sup>1</sup> 187.1
35621 08	Precision (BEC 5 and up).....	7.2	56.6	
35621 14	Single row maximum capacity type.....	11.7	30.3	<sup>1</sup> 25.1
35621 16	Double row.....	17.1	38.2	23.0
35621 18	Angular contact.....	6.2	23.2	19.6
35621 19	All other ground or precision bearings.....	(NA)	28.9	52.7
35621 25	Annular, unground (including self-aligning).....	62.8	8.6	8.5
35621 33	Thrust, ground.....	9.1	14.6	13.9
35621 35	Thrust, unground.....	51.4	3.5	2.1
35621 51	Other ball bearings.....	(NA)	14.9	<sup>1</sup> 13.8
35621 00	Not specified by kind.....	(X)	5.8	3.1
35622 31	Taper (except thrust) roller bearings, complete <sup>2</sup> .....	(NA)	367.2	<sup>1</sup> 294.2
35623 --	Other roller bearings, complete, total <sup>2</sup> .....	(X)	229.2	<sup>1</sup> 152.1
	Cylindrical, except thrust:			
35623 13	Regular (BEC 1 and 3).....	(NA)	88.4	64.7
35623 15	Precision (BEC 5 and up).....	(NA)	10.8	
	Spherical (including hourglass and barrel but excluding thrust):			
35623 23	Single row.....	2.1	10.0	7.8
35623 27	Double row.....	0.8	40.2	33.9
35623 41	Needle.....	(NA)	40.7	24.3
35623 53	Thrust (all types).....	(NA)	25.0	12.7
35623 98	Other roller bearings.....	(NA)	14.1	6.2
35623 00	Not specified by kind.....	(X)	-	2.5
35624 --	Mounted bearings, total <sup>2</sup> .....	(X)	95.9	<sup>1</sup> 62.1
	Ball:			
35624 13	Unit mounted.....	14.5	57.0	<sup>3</sup> 39.3
35624 15	Split mounted.....	(NA)	0.9	
	Roller:			
35624 53	Unit mounted.....	(NA)	36.7	<sup>4</sup> 22.8
35624 55	Split mounted.....			
35624 00	Not specified by kind.....	(X)	1.3	-
35629 --	Parts and components for ball and roller bearings, including balls and rollers, sold separately, total <sup>2</sup> .....	(X)	116.3	<sup>1</sup> 165.0
35629 11	Balls.....	(NA)	67.3	27.1
35629 31	Rollers.....	(NA)	19.6	8.3
35629 51	Other antifriction bearing components and parts, including unassembled bearings, cages, housing closures, collars, races, etc.....	(X)	29.2	<sup>1</sup> 28.9
35629 00	Not specified by kind.....	(X)	0.2	0.7
35620 00	Ball and roller bearings, n.s.k. (For companies with 10 or more employees. See Note.)...	(X)	11.3	3.3
35620 02	Ball and roller bearings, n.s.k. (For companies with less than 10 employees. See Note.)...	(X)	0.8	

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

Footnotes continued on next page.



## 1967 CENSUS OF MANUFACTURES

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

Footnotes for Table 3--35E-2--Continued

- Represents zero. (NA) Not available. n.s.k. Not specified by kind. <sup>r</sup> Revised. (X) Not applicable.<sup>1</sup>In 1963, the following figures represent the value of shipments of ball and roller bearings transferred from one plant of a company to another plant of the same company:

Product code	Value
3562-	108.3
35621	13.2
35622, 3, 4, 9	95.1

<sup>2</sup>The product class structure for this industry was revised in 1967 as follows:

1967 code	1966 code
35621	35621
35622	35622
35623	35623
35624	35624
35629	35624

<sup>3</sup>In 1963 represents 8.0 million units.<sup>4</sup>In 1963 represents 0.9 million units.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3562.--BALL AND ROLLER BEARINGS					
	Materials, parts, containers, and supplies, total.....		(X)	464.0	(X)	343.7
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	34.2	10.8	13.2	4.5
331012	Sheet and strip.....	...do.....	71.9	16.3	68.4	13.1
331017	Wire and wire products.....	...do.....	56.4	20.3	22.3	8.6
331013	Plates.....	...do.....	11.5	4.2	3.8	0.5
331015	Structural shapes.....	...do.....			4.7	1.7
331019	All other carbon steel mill shapes and forms.....	...do.....				
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	...do.....	114.3	44.3	138.3	52.3
331029	All other alloy mill shapes and forms.....	...do.....	216.2	110.9	180.2	84.0
331031	Stainless steel.....	...do.....	2.7	4.1	1.2	1.8
	Copper and copper-base alloy:					
335102	Rod, bar, and mechanical wire, including extruded an/or drawn shapes.....	Million lbs.....	3.1	2.6	2.2	1.2
335123	Plate, sheet, and strip, including military cups and discs....	...do.....			0.3	0.1
335127	Pipe and tube.....	...do.....			(NA)	(D)
333122	Copper and copper-base alloy refinery shapes.....	1,000 short tons.	(D)	(D)	(D)	(D)
	Scrap (excluding home scrap):					
999811	Iron and steel.....	...do.....	(D)	(D)	(D)	(D)
999812	Copper and copper-base alloy.....	...do.....	(D)	(D)	(NA)	(NA)
	Castings (rough and semifinished): <sup>1</sup>					
332011	Iron (gray and malleable).....	...do.....	23.7	10.0	21.7	8.3
332300	Steel.....	...do.....	9.3	6.7	2.4	1.6
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	(D)	(D)	(D)	(D)
336200	Copper and copper-base alloy.....	...do.....	4.0	4.7	2.9	3.1
339915	Metal powders.....	...do.....	(D)	(D)	(NA)	(NA)
339100	Iron and steel forgings <sup>1</sup> .....	1,000 short tons.	31.3	22.1	16.6	11.5
	Bearings:					
356218	Ball.....		(X)	15.6	(X)	10.8
356201	Roller.....		(X)	7.7	(X)	3.7
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	175.8	(X)	120.3
976000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> .....		(X)	7.3	(X)	16.7

(D) Included with material code 970099, "All other materials and components, etc." to avoid disclosing figures for individual companies.

(NA) Not available. (X) Not applicable. n.s.k. Not specified by kind.

<sup>1</sup>No data are available for castings or forgings produced and consumed in the same establishment.<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3562, these small establishments accounted for approximately 0.7 percent of payrolls and 0.7 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

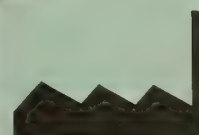
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

## preliminary report

### Blowers and fans

SIC Code 3564

The Blowers and Exhaust and Ventilation Fans Industry includes establishments primarily engaged in manufacturing industrial and commercial blowers, industrial and commercial exhaust and ventilating fans, and attic fans. Establishments primarily engaged in manufacturing air-conditioning units are classified in industry 3585, and free air-circulating fans for use on desks, pedestals, or wall brackets, as well as household window-type fans and roll-abouts, kitchen and household ventilating and exhaust fans in industry 3634.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Blowers and Fans Industry amounted to \$530.2 million, an increase of 68 percent compared with 1963. Value added by manufacture at \$305.0 million in 1967 was 69 percent more than value added in 1963. Average employment in the industry showed an increase of 42 percent from 1963 to a total of 21.6 thousand employees in 1967.

Of the \$530.2 million total value of shipments and other receipts of establishments classified as blowers and fans, \$60 million were products primary to other industries; and \$43 million were receipts for miscellaneous activities. The industry shipments of primary products repre-

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total	With 20 employees or more (number)	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)							
	INDUSTRY 3564.--BLOWERS AND FANS													
1967 Census....	289	131	21.6	152.7	15.5	32.6	96.1	305.0	225.1	530.2	14.4	84.7	88	86
1966 ASM <sup>1</sup> .....	(NA)	(NA)	17.9	126.6	13.0	26.7	78.8	253.5	198.4	444.3	12.5	76.7	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	17.0	115.0	11.8	24.6	68.9	223.1	180.6	400.5	8.4	64.1	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	15.1	102.9	10.7	23.0	63.3	191.2	149.0	339.0	*8.7	54.3	(NA)	(NA)
1963 Census....	237	97	15.2	94.1	10.7	21.6	57.8	180.8	135.7	315.3	7.0	53.3	83	79
1962 ASM <sup>1</sup> .....	(NA)	(NA)	14.7	93.6	9.8	20.4	51.7	169.2	140.2	307.0	*7.7	53.8	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	14.4	88.9	9.6	19.5	49.7	155.1	131.6	286.2	5.2	49.4	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	14.6	88.5	9.8	19.7	49.9	153.8	125.3	280.5	*6.0	52.0	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	15.5	88.6	10.5	21.2	50.5	154.6	132.9	285.6	4.5	56.1	(NA)	(NA)
1958 Census <sup>2</sup> ...	207	104	15.9	82.5	11.0	21.4	50.3	145.0	121.6	271.6	5.6	51.2	83	79

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 3 and 2, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued November 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary  
Rocco C. Siciliano, Under Secretary  
Harold C. Passer, Assistant Secretary for Economic Affairs  
**BUREAU OF THE CENSUS** George Hay Brown, Director



sented 88 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 83 percent in 1963.

The total value of blowers and fans shipped by all producers in 1967 was \$494.8 million of which \$427 million, or 86 percent, were shipped by plants classified in industry 3564, Blowers and Fans, while the remainder was shipped by

plants classified in other industries. This percent, called the coverage ratio, was 79 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3564, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-35H, Fans and Blowers.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)						
INDUSTRY 3564.--BLOWERS AND FANS													
United States, total.....	289	131	21.6	152.7	15.5	32.6	96.1	305.0	225.1	530.2	14.4	15.2	180.8
New England.....	17	9	2.4	18.6	1.8	4.1	11.4	30.8	24.6	55.7	1.5	2.3	22.3
Middle Atlantic.....	60	27	5.4	38.8	3.9	8.4	24.2	79.8	50.7	130.5	4.2	3.7	41.0
New York.....	26	11	3.1	22.8	2.4	5.4	15.8	42.1	27.8	71.0	1.8	2.1	23.2
New Jersey.....	16	8	1.3	9.2	0.7	1.4	4.1	21.8	14.3	35.1	(D)	0.9	9.6
Pennsylvania.....	18	8	1.1	6.8	0.8	1.6	4.3	16.0	8.7	24.4	(D)	0.7	8.2
East North Central....	95	53	8.5	59.7	6.1	12.1	37.0	121.5	91.6	213.7	4.7	5.8	72.9
Ohio.....	25	18	3.0	21.6	2.1	4.2	13.5	41.2	30.9	72.6	1.4	1.6	19.8
Indiana.....	12	7	2.0	12.4	1.5	3.1	8.4	23.8	17.9	41.8	1.0	1.3	12.7
Illinois.....	33	15	1.6	10.6	1.0	2.0	6.0	25.1	16.8	41.8	0.4	1.1	15.7
Michigan.....	14	7	1.5	12.1	1.1	2.1	7.3	24.3	20.5	45.4	1.7	1.5	19.5
Wisconsin.....	11	6	0.5	3.0	0.3	0.7	1.8	7.0	5.4	12.1	0.2	0.3	5.1
West North Central....	12	7	0.6	4.4	0.4	0.9	2.6	9.5	5.6	15.1	0.4	0.5	4.7
Minnesota.....	4	4	0.5	3.8	0.3	0.7	2.1	8.4	4.7	13.1	0.3	0.4	4.2
South.....	63	21	3.2	21.0	2.2	4.9	14.4	45.0	41.0	85.1	2.7	1.6	23.9
Tennessee.....	7	3	0.2	0.9	0.1	0.2	0.5	1.8	1.2	3.0	0.2	(D)	(D)
Pacific.....	35	13	1.4	9.7	1.0	2.0	6.2	17.5	10.8	28.4	0.8	1.4	15.7

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Value of Shipments by All Producers: 1967 and 1963

(Includes value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Value (million dollars)	
		1967	1963
3564- --	BLOWERS AND FANS, TOTAL.....	494.8	299.4
35641 00	Industrial fans and blowers, including blowers, industrial, exhaust, attic, and ventilating fans, and parts: As reported in the census of manufactures <sup>1</sup> .....	294.8	191.2
	As reported in Census Annual Form MA-35H total <sup>1</sup> .....	278.5	192.7
35642 --	Dust collection, air purification equipment and air washers, total.....	175.9	95.0
35642 31	Air washers: As reported in the census of manufactures <sup>1</sup> .....	2.7	3.9
	As reported on Census Annual Form MA-35H <sup>1</sup> .....	2.5	3.6
	Dust collection and other air purification equipment: For heating, ventilating, and air-conditioning systems: Electrostatic precipitation equipment.....	19.2	<sup>2</sup> 21.8
35642 41	Air filters for air-conditioners and furnaces, etc., of 2400 c.f.m. and under.....	28.7	<sup>3</sup> 66.5
35642 43	Other dust collection and other air purification equipment (including air filters for air-conditioners and furnaces, etc., of over 2400 c.f.m.).....	20.0	
35642 51	For industrial gas cleaning equipment: Electrostatic precipitation equipment.....	26.9	( <sup>2</sup> )
35642 54	Fabric filters.....	27.5	( <sup>3</sup> )
35642 55	Mechanical collectors.....	21.0	
35642 57	Scrubbers.....	3.7	
35642 59	Other.....	12.0	
35642 00	Dust collection, air purification equipment and air washers, n.s.k.....	14.2	2.8
35640 00	Blowers and fans, n.s.k. (For companies with 10 or more employees. See Note.).....	19.3	13.2
35640 02	Blowers and fans, n.s.k. (For companies with fewer than 10 employees. See Note.).....	4.8	

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind.

<sup>1</sup>For these products, figures were also collected in the Bureau of the Census commodity survey program. In lieu of asking for detailed statistics on these products in the census of manufactures, respondents were asked to report only value of shipments for specified groups of products for which separate figures had previously been collected in the commodity survey. In most cases, the value figures reported in the census of manufactures for each group of products agreed closely with the corresponding figures reported in the commodity survey. However, there were some differences between the census figures and the commodity survey figures. These variations were due primarily to the following reasons:

- Use of different reporting periods (calendar year vs. fiscal year).
- Use of different bases for reporting value (company sales vs. factory production).
- Use of estimates in reporting figures on the commodity survey, whereas census of manufactures figures generally represent more exact shipment figures.

See Current Industrial Reports Series MA-35H, Fans and Blowers for more detailed product data.

<sup>2</sup>1963 data for electrostatic precipitation equipment for industrial gas cleaning (product code 35642 51) are included with product code 35642 41 electrostatic precipitation equipment for heating, ventilating and air-conditioning systems.

<sup>3</sup>1963 data for industrial gas cleaning equipment (other than electrostatic precipitation types) are included with product code 35642 49, other dust collection and other air purification equipment.

## 1967 CENSUS OF MANUFACTURES

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3564.--BLOWERS AND FANS					
	Materials, parts, containers, and supplies, total.....		(X)	189.4	(X)	114.8
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons..	15.2	3.0	10.1	1.9
331012	Sheet and strip.....	do.....	83.4	13.9	72.3	11.4
331013	Plates.....	do.....	24.3	4.2	19.5	2.9
331015	Structural shapes.....	do.....	5.4	1.1	4.5	0.7
331017	Wire and wire products.....	do.....	1.2	0.8	0.8	0.4
331019	All other carbon steel mill shapes and forms.....	do.....	7.0	1.5	6.5	1.8
331020	Alloy steel, except stainless.....	do.....	8.2	2.4	3.5	1.1
331031	Stainless steel.....	do.....	1.5	2.3	0.9	1.3
	Copper and copper-base alloy:					
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	(NA)	3.8	0.1	(Z)
335123	Plate, sheet, and strip.....	do.....			0.6	0.4
335127	Pipe and tube.....	do.....			1.1	0.7
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	do.....	18.8	7.2	10.7	4.3
335205	Extruded shapes (including extruded rod, bar, pipe, tube, etc.).....	do.....	-	-	0.3	0.2
335209	All other aluminum mill shapes and forms.....	do.....	2.6	1.1	0.3	0.2
331051	Pig iron.....	1,000 short tons..	(D)	(D)	1.4	0.1
999811	Iron and steel scrap (excluding home scrap).....	do.....	(D)	(D)	(D)	(D)
	Castings (rough and semifinished): <sup>1</sup>					
332011	Iron (gray and malleable).....	do.....	8.0	3.8	9.6	4.0
332300	Steel.....	do.....	(D)	(D)	0.5	0.4
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	(NA)	3.8	1.5	1.1
336200	Copper and copper-base alloy.....	do.....	(D)	(D)	0.2	0.2
	Electric motors and generators:					
362110	Timing motors, synchronous and subsynchronous.....	1,000.....	677.4	12.1	85.3	1.1
362115	Other fractional horsepower electric motors.....	do.....			218.1	4.8
362120	Integral horsepower motors and generators.....	do.....			89.6	7.3
	Bearings:					
356218	Ball.....	do.....	(X)	3.1	(X)	3.2
356201	Roller.....	do.....	(X)	0.4	(X)	0.6
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	78.3	(X)	50.3
976000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> .....		(X)	35.5	(X)	14.4

- Represents zero. (D) Included with material code 970099, "All other materials and components," to avoid disclosing figures for individual companies. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable. (Z) Less than 0.1 when rounded.

<sup>1</sup>Excludes castings produced and consumed in the same establishment.

<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

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In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3564, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

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More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

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# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# 1967 CENSUS OF MANUFACTURES



MC67(P)-35E-4

## INDUSTRY SERIES

### Industrial patterns

SIC Code 3565

### preliminary report

The Industrial Patterns Industry includes establishments primarily engaged in manufacturing industrial patterns.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Industrial Patterns Industry amounted to \$202.9 million, an increase of 44 percent compared with 1963. Value added by manufacture at \$166.1 million in 1967 was 48 percent

more than value added in 1963. Average employment in the industry showed an increase of 10 percent from 1963 to a total of 10.9 thousand employees in 1967.

Of the \$202.9 million total value of shipments and other receipts of establishments classified as industrial patterns, \$8 million were products primary to other industries; and \$8 million were receipts for miscellaneous activities. The industry shipments of primary products represented 96 percent of the total manufactured product shipments, primary and secondary. This percent called the specialization ratio for the industry, was also 96 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3565.--INDUSTRIAL PATTERNS														
1967 Census....	1,163	141	10.9	106.5	9.5	19.4	87.0	166.1	37.4	202.9	8.1	12.7	96	80
1966 ASM <sup>1</sup> .....	(NA)	(NA)	12.2	118.0	10.7	22.5	100.8	187.3	52.0	233.0	*11.7	15.5	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	12.1	101.3	10.6	20.4	87.7	158.3	46.4	201.7	*7.4	10.5	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	10.5	87.6	9.4	19.4	76.0	138.3	33.2	170.0	*7.4	9.0	(NA)	(NA)
1963 Census.....	1,209	106	9.9	75.6	8.7	17.7	64.9	112.6	29.2	140.7	3.8	8.4	96	80
1962 ASM <sup>1</sup> .....	(NA)	(NA)	9.5	67.0	8.6	16.0	56.6	98.3	22.2	119.7	*1.0	6.1	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	8.9	59.1	8.1	14.5	49.1	85.5	21.5	106.4	*1.5	5.3	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	9.1	63.8	8.4	15.4	53.7	93.0	22.3	116.5	(S)	5.5	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	9.4	61.4	8.6	16.2	51.8	88.3	23.1	110.4	(S)	6.3	(NA)	(NA)
1958 Census <sup>2</sup> ...	1,174	96	8.9	54.7	7.7	13.9	45.4	78.1	20.7	98.3	3.2	6.1	95	74

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

(S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 10 and 6, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director



The total value of industrial patterns shipped by all producers in 1967 was \$234.6 million of which \$187 million, or 80 percent, were shipped by plants classified in industry 3565, Industrial Patterns, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was also 80 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total	With 20 employees or more (number)	Number	Payroll (million dollars)	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
INDUSTRY 3563.--INDUSTRIAL PATTERNS													
United States, total.....	1,163	141	10.9	106.5	9.5	19.4	87.0	166.1	37.4	202.9	8.1	9.9	112.6
New England.....	94	8	0.6	5.2	0.5	1.0	4.1	7.7	2.0	9.7	0.2	0.6	5.8
Rhode Island.....	10	2	0.1	0.6	0.1	0.1	0.4	0.7	0.2	0.9	(Z)	(D)	(D)
Connecticut.....	26	1	0.2	1.5	0.1	0.3	1.2	2.5	0.6	3.1	0.1	0.2	1.7
Middle Atlantic.....	214	18	1.6	12.7	1.4	2.9	10.4	21.0	5.6	26.4	0.9	1.5	14.4
New York.....	72	5	0.5	4.5	0.5	1.0	3.6	7.3	1.9	9.1	0.4	0.6	6.5
New Jersey.....	41	3	0.3	2.4	0.2	0.5	1.8	3.8	0.8	4.5	0.1	(D)	(D)
Pennsylvania.....	101	10	0.8	5.9	0.7	1.4	5.0	9.9	2.9	12.7	0.4	(D)	(D)
North Central.....	624	100	7.5	78.4	6.5	13.3	64.0	119.4	24.7	143.7	4.7	6.6	80.1
Illinois.....	115	15	1.1	10.3	1.0	1.9	8.8	15.6	3.9	19.5	0.5	0.9	10.4
Iowa.....	7	1	0.1	0.9	0.1	0.2	0.8	1.6	0.3	1.8	0.1	(D)	(D)
Kansas.....	13	1	0.1	0.5	0.1	0.1	0.4	0.9	0.3	1.2	(Z)	(D)	(D)
South Atlantic.....	29	1	0.1	0.8	0.1	0.2	0.6	1.4	0.3	1.7	(D)	0.1	1.0
East South Central....	26	3	0.2	1.5	0.2	0.4	1.2	2.3	0.9	3.2	(D)	0.2	1.9
West South Central....	40	-	0.2	1.3	0.1	0.3	1.1	2.1	0.7	2.8	(D)	0.2	1.5
Texas.....	29	-	0.1	0.8	0.1	0.2	0.6	1.3	0.4	1.7	(D)	(D)	(D)
Mountain.....	15	1	0.1	0.6	0.1	0.1	0.5	1.0	0.2	1.2	(Z)	0.1	0.5
Colorado.....	8	1	0.1	0.4	0.1	0.1	0.3	0.6	0.2	0.7	(Z)	(D)	(D)
Pacific.....	121	10	0.7	6.2	0.6	1.2	5.1	11.2	3.0	14.1	0.5	0.7	7.3
Oregon.....	8	2	0.1	0.8	0.1	0.2	0.7	1.2	0.2	1.4	(Z)	(D)	(D)
California.....	105	7	0.5	4.9	0.5	1.0	4.0	9.3	2.5	11.8	0.4	0.6	6.1

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

- Represents zero. (D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.  
(Z) Less than \$50 thousand.



TABLE 3. Value of Shipments by All Producers: 1967 and 1963

(Includes value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Value of total shipments including interplant transfers (million dollars)	
		1967	1963
3565- --	INDUSTRIAL PATTERNS, TOTAL <sup>1</sup> .....	234.6	159.9
35650 11	Foundry patterns (wood, metal, etc.).....	162.2	105.6
35650 98	All other industrial patterns (wood, metal, etc.) (except shoe patterns).....	16.0	28.1
35650 00	Industrial patterns, n.s.k. (For companies with 10 or more employees. See Note.).....	32.4	26.2
35650 02	Industrial patterns, n.s.k. (For companies with less than 10 employees. See Note.).....	24.0	

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind.

<sup>1</sup>Excludes industrial patterns produced for use in the same establishment.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3565.--INDUSTRIAL PATTERNS					
	Materials, components, parts, containers, and supplies, total.....		(X)	29.9	(X)	23.5
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	(NA)	0.2	0.6	0.2
331012	Sheet and strip.....	..do.....	(NA)	0.2	0.1	(Z)
331013	Plates.....	..do.....	(NA)	0.4	1.4	0.3
331015	Structural shapes.....	..do.....				
331017	Wire and wire products.....	..do.....				
331019	All other carbon steel mill shapes and forms.....	..do.....				
	Alloy Steel (except stainless):					
331021	Bars and bar shapes.....	..do.....	(NA)	0.1	0.4	0.2
331029	All other alloy steel mill shapes and forms.....	..do.....				
331031	Stainless steel.....	..do.....				
	Copper and copper-base alloy:					
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	(NA)	0.1	(NA)	(Z)
335123	Plate, sheet and strip (including military cups and discs).....	..do.....				
335127	Pipe and tube.....	..do.....				
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate and foil.....	..do.....	(NA)	0.4	0.3	0.2
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	..do.....	(NA)	(Z)		
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	..do.....	(NA)	0.1		
	Castings (rough and semifinished): <sup>1</sup>					
332011	Iron (gray and malleable).....	1,000 short tons.	2.1	1.5	1.9	0.7
332300	Steel.....	..do.....	(NA)	0.2	0.2	0.1
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	(NA)	2.1	1.8	1.5
336200	Copper and copper-base alloy.....	..do.....	(NA)	0.1	0.1	0.1
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	10.9	(X)	7.7
972000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> .....		(X)	13.6	(X)	12.4

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable. (Z) Less than 0.1 when rounded.

<sup>1</sup>No data are available on the quantities of castings produced and consumed in the same establishment.

<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

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This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

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## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

**Textile mill products • Apparel and leather • Chemicals, rubber, and plastics • Machinery and equipment • Primary metals • Intermediate metal products • Processed foods • Lumber, furniture, and paper products • Stone, clay, and glass products.**

A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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# 1967 CENSUS OF MANUFACTURES



MC67(P)-35E-5

## INDUSTRY SERIES

**preliminary  
report**

### Power transmission equipment

SIC Code 3566

The Mechanical Power Transmission Equipment, Except Ball and Roller Bearings, Industry includes establishments primarily engaged in manufacturing mechanical power transmission equipment and parts, for industrial machinery. Establishments primarily engaged in manufacturing automotive, tank, and tractor power transmission equipment are classified in industry 3714; aircraft power transmission equipment in industry 3729; and ball and roller bearings in industry 3562.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Power Transmission Equipment Industry amounted to \$1,257 million, an increase of 41 percent compared with 1963. Value added by manufacture at \$796 million in 1967 was 43 percent more than value added in 1963. Average employment in the industry showed an increase of 16 percent from 1963 to a total of 54 thousand employees in 1967.

Of the \$1,257 million total value of shipments and other receipts of establishments classified as power transmission equipment, \$122 million were products primary to other industries; and \$75 million were receipts for miscellaneous

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total  (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3566.--POWER TRANSMISSION EQUIPMENT														
1967 Census....	513	303	54.3	407.0	40.3	82.9	272.7	795.6	481.3	1,256.8	56.9	286.0	90	84
1966 ASM <sup>1</sup> .....	(NA)	(NA)	55.4	417.1	41.5	89.8	287.1	829.2	515.7	1,314.1	53.2	276.4	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	52.6	371.0	39.3	82.4	252.3	713.1	450.1	1,147.4	41.1	240.9	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	48.3	334.9	36.3	76.5	229.3	622.4	393.7	998.2	31.7	210.1	(NA)	(NA)
1963 Census....	532	272	46.7	303.3	34.4	71.1	203.9	555.7	345.1	888.6	26.4	190.6	84	79
1962 ASM <sup>1</sup> .....	(NA)	(NA)	43.6	281.7	31.4	64.6	182.8	494.9	300.9	787.6	*32.0	169.1	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	40.0	244.8	28.8	57.8	157.3	429.0	252.3	682.6	17.2	146.5	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	41.8	249.8	30.3	61.4	161.8	431.1	257.0	691.9	23.0	142.3	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	44.2	255.6	32.2	64.6	168.4	470.9	283.3	739.9	21.9	153.7	(NA)	(NA)
1958 Census <sup>2</sup> ...	470	236	41.8	226.1	29.8	57.5	143.8	384.4	230.8	630.3	26.8	133.6	87	85

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director

activities. The industry shipments of primary products represented 90 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 84 percent in 1963.

The total value of power transmission equipment shipped by all producers in 1967 was \$1,256 million of which \$1,060 million, or 84 percent, were shipped by plants classified in industry 3566, Power Transmission Equipment, while the

remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 79 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total	With 20 employees or more (number)	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
INDUSTRY 3566.--POWER TRANSMISSION EQUIPMENT													
United States, Total.....	513	303	54.3	407.0	40.3	82.9	272.7	795.6	481.3	1,256.8	56.9	46.7	555.7
New England.....	46	28	5.1	35.7	3.8	8.0	24.9	72.7	34.6	106.5	4.0	4.4	51.9
Massachusetts.....	28	17	3.7	26.0	2.7	5.5	17.8	51.6	26.1	77.9	2.8	3.4	39.2
Connecticut.....	13	9	1.3	9.0	1.0	2.3	6.6	19.4	7.3	25.9	1.1	0.9	11.9
Middle Atlantic.....	98	56	10.0	71.4	7.1	14.5	45.8	127.4	80.8	208.6	9.1	9.3	99.7
New York.....	45	21	3.5	26.1	2.5	5.1	16.0	49.4	24.1	71.4	4.6	2.7	32.7
New Jersey.....	20	11	1.2	8.9	0.9	1.8	6.0	14.9	13.7	29.3	1.1	1.3	12.8
Pennsylvania.....	33	24	5.3	36.3	3.7	7.6	23.8	63.1	42.9	106.2	3.4	5.4	54.2
East North Central....	220	136	30.5	238.1	22.9	46.6	160.6	464.9	267.6	719.5	34.1	26.0	327.2
Ohio.....	50	35	4.3	32.2	3.2	6.7	21.4	65.2	47.4	111.5	3.4	4.2	50.4
Indiana.....	28	18	10.5	80.2	8.1	16.3	57.0	148.2	78.2	224.0	9.8	8.1	100.6
Illinois.....	71	42	7.0	55.3	5.2	11.0	36.9	106.2	66.9	170.4	7.9	6.0	71.5
Michigan.....	44	24	3.1	23.4	2.3	4.7	15.6	50.2	32.2	77.1	1.6	2.1	25.4
Wisconsin.....	27	17	5.6	47.1	4.1	8.1	30.0	95.1	42.9	136.4	11.4	5.5	79.3
West North Central....	42	27	2.3	15.7	1.7	3.4	10.2	30.2	23.1	52.1	1.6	1.7	18.3
Minnesota.....	17	10	0.8	5.9	0.7	1.4	4.2	10.6	8.3	18.6	0.4	0.6	5.9
Missouri.....	14	8	0.6	4.2	0.4	0.7	2.4	8.8	6.7	15.2	0.7	0.5	6.0
South.....	41	25	3.1	20.5	2.4	5.1	14.1	49.1	45.9	91.3	5.9	3.0	34.1
South Atlantic.....	23	17	1.5	9.8	1.2	2.7	7.1	21.8	21.3	41.2	(D)	(D)	(D)
Florida.....	7	3	0.2	1.1	0.2	0.3	0.8	2.5	2.2	4.8	0.2	(D)	(D)
West.....	66	31	3.3	25.7	2.4	5.2	17.0	51.1	29.3	78.7	2.2	2.3	24.6

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000 units)	Value (million dollars)	Quantity (1,000 units)	Value (million dollars)
3566- --	POWER TRANSMISSION EQUIPMENT, TOTAL.....	(X)	1,255.9	(X)	883.4
35661 --	Plain bearings.....	(X)	106.3	(X)	87.9
35661 15	Plain bearings and bushings, unmounted, machined, excluding carbon and graphite, all types, except automotive.....	(X)	84.6	(X)	77.4
35661 51	Mounted bearings, plain.....	(X)	11.1	(X)	10.2
35661 00	Plain bearings, n.s.k.....	(X)	10.6	(X)	0.4
35662 --	Speed changers, industrial high speed drives, and gears.....	(X)	480.3	(X)	333.3
	Gears, assembled and unassembled, speed reducers and increasers, mechanical power transmissions, except marine, automobile, truck, bus and aircraft (excludes aircraft, related engine and power take-off gears):				
35662 11	Variable speed changers.....			79.5	17.1
35662 21	Industrial high speed drives, fixed ratio (pitch line velocity 4,000 feet per minute and over, and pinion speeds of 3,600 r.p.m. and over).	(NA)	47.0	(NA)	12.3
	Speed reducers, fixed ratio, enclosed (except gear motors):				
	Worm gear speed reducers (except gear motors and shaft mounted speed reducers):				
35662 22	Above 8 inch center distance.....	(NA)	3.2	(NA)	17.9
35662 23	Above 3 inch center distance up to and including 8 inch.....	(NA)	13.2		
35662 24	3 inch center distance and below.....	319.4	25.6	161.8	12.0
35662 26	Shaft mounted speed reducers (excludes shaft mounted gear motors but includes shaft mounted worm gear reducers).....	161.9	27.2	87.2	15.5
	Parallel, concentric shaft and level gear speed reducers:				
35662 27	Above 15 inch low speed centers.....	8.8	21.0	8.2	16.9
35662 28	15 inch low speed centers and below.....	(NA)	32.7	(NA)	17.2
	Gear motor reducer, elements produced at the plant including shaft mounted gear motors:				
35662 34	Under 1/8 horsepower.....	(NA)	129.6	(NA)	115.7
35662 36	1/8 horsepower to but not including 3/4 horsepower.....	301.5	117.2	236.8	115.0
35662 37	3/4 horsepower to and including 5 horsepower.....	201.3	131.0	129.1	118.8
35662 39	Over 5 horsepower.....	90.9	123.0	77.4	116.7
	Gears, pinions and racks, unmounted:				
35662 41	Fine pitch (20.00 diametral pitch and higher).....	(X)	48.3	(X)	34.0
35662 49	Other than fine pitch (19.99 diametral pitch and less) excluding aircraft and related engine and power take-off gears but including railway type pinions, and racks.....	(X)	128.8	(X)	113.0
35662 00	Speed changers, gears and industrial high speed drives, n.s.k.....	(X)	32.5	(X)	11.0
35663 --	Other mechanical power-transmission equipment.....	(X)	610.6	(X)	449.5
	Clutches:				
35663 11	Friction type clutches.....	(NA)	29.8	(NA)	25.5
35663 13	Hydraulic type clutches including hydraulic couplings.....	(NA)	13.7	(NA)	9.7
35663 19	All other clutches.....	(NA)	21.0	(2)	(2)
	Flexible couplings:				
	1-inch nominal bore and over:				
35663 21	Gear type.....	(NA)	24.9	68.9	10.3
35663 22	Other than gear type.....	1,035.7	19.5	542.5	14.6
35663 24	Less than 1-inch nominal bore.....	(NA)	1.7	498.6	2.2
35663 25	Universal joints.....	5,500.6	54.8	3,204.4	29.2
35663 27	Flexible shafts.....	(X)	1.3	(X)	(2)
	Chains for sprocket drives:				
35663 33	ASA standard roller chain.....	(X)	86.4	(X)	98.9
35663 35	Other chains for sprocket drives.....	(X)	33.7		
	Sprockets:				
35663 43	For ASA standard roller chain.....	(X)	31.7	(X)	29.0
35663 45	Other sprockets.....	(X)	11.2		
35663 51	Pulleys.....	(NA)	13.6	(NA)	17.6
	Sheaves:				
35663 61	Single drive.....	(NA)	24.3	(NA)	5.7
35663 65	Multiple drive.....	(NA)		(NA)	15.3

See footnotes at end of table.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000 units)	Value (million dollars)	Quantity (1,000 units)	Value (million dollars)
	POWER TRANSMISSION EQUIPMENT--Continued				
	Sheaves--Continued				
35663 87	Railroad car journal bearings.....	(NA)	( <sup>3</sup> )	(NA)	8.7
35663 92	Inboard marine gear transmissions (less than 600 horsepower) includes reversing and speed changing gear drives).....	(X)	23.4		
35663 94	Inboard marine gear transmissions (600 hp. and over) (including reversing and speed changing gear drives but excluding outboard gear drives).....	(X)	3.1	(X)	11.2
35663 96	Outboard gear drives (inboard prime mover).....	(X)	<sup>3</sup> 179.7		
35663 98	Other mechanical power-transmission equipment (except aircraft, automobile, truck, and bus).....	(X)	36.8	(X)	<sup>2</sup> 163.4
35663 00	Other mechanical power-transmission equipment, n.s.k.....	(X)		(X)	8.4
35660 00	Mechanical power-transmission equipment, including bearings, n.s.k. (For companies with 10 employees or more. See Note.).....	(X)	53.0		
35660 02	Mechanical power-transmission equipment, including bearings, n.s.k. (For companies with less than 10 employees. See Note.).....	(X)	5.7	(X)	12.6

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. (X) Not applicable. n.s.k. Not specified by kind.

<sup>1</sup>Represents the value of gear motor reducer elements only. Does not include the value of electric motors shipped as part of gear motor reducer elements.

<sup>2</sup>In 1963, these values were combined in 3566398, other mechanical power-transmission equipment.

<sup>3</sup>In 1967, this value was combined in 3566398, other mechanical power-transmission equipment.

## 1967 CENSUS OF MANUFACTURES

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3566.--POWER TRANSMISSION EQUIPMENT					
	Materials, components, parts, containers, and supplies, total.....		(X)	400.4	(X)	290.2
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	89.5	21.4	78.8	16.5
331012	Sheet and strip.....	..do.....	80.9	19.6	85.0	18.1
331013	Plates.....	..do.....	42.7	8.2	29.9	4.7
331015	Structural shapes.....	..do.....	2.3	0.6	3.7	0.8
331017	Wire and wire products.....	..do.....	4.1	2.4	3.3	1.6
331019	All other carbon steel mill shapes and forms.....	..do.....	10.0	3.1	7.8	2.3
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	..do.....	31.4	10.1	35.6	9.9
331029	All other alloy steel mill shapes and forms.....	..do.....	23.2	10.5	16.9	8.2
331031	Stainless steel.....	..do.....	2.2	3.1	1.6	2.0
	Copper and copper-base alloy:					
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	million lbs.....	2.8	1.7	2.0	1.6
335127	Pipe and tube.....	..do.....	4.7	2.5		
335123	Plate, sheet, and strip, including military cups and discs...	..do.....	0.7	0.7		
333122	Copper and copper-base alloy refinery shapes.....	1,000 short tons.	7.3	5.5	9.2	6.1
	Scrap (excluding home scrap):					
999811	Iron and steel.....	..do.....	29.7	1.4	39.7	1.6
999812	Copper and copper-base alloy.....	..do.....	15.3	9.3	13.0	6.1
	Castings (rough and semifinished): <sup>1</sup>					
332011	Iron (gray and malleable).....	..do.....	105.1	37.5	84.5	25.6
332300	Steel.....	..do.....	9.8	6.9	18.0	8.4
336100	Aluminum and aluminum-base alloy.....	million lbs.....	6.4	5.3	2.5	2.3
336200	Copper and copper-base alloy.....	..do.....	10.9	9.4	9.2	5.8
339915	Metal powders.....	..do.....	7.6	2.6	(NA)	(NA)
339100	Iron and steel forgings <sup>1</sup> .....	1,000 short tons.	55.8	25.5	36.2	15.8
	Bearings:					
356218	Ball.....	.....	(X)	10.8	(X)	9.6
356201	Roller.....	.....	(X)	8.2	(X)	6.6
970099	All other materials and components, parts, containers, and supplies consumed.....	.....	(X)	114.7	(X)	102.3
976000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> .....	.....	(X)	79.4	(X)	33.6

(X) Not applicable. (NA) Not available. n.s.k. Not specified by kind.

<sup>1</sup>No data are available for the quantities of castings or forgings produced and consumed at the same establishment except for iron castings (34.7 thousand short tons) and steel castings (0.1 thousand short tons) in 1963.<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3566, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products**--In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture**--This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment**--For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories**--Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

**U.S. DEPARTMENT OF COMMERCE  
BUREAU OF THE CENSUS  
WASHINGTON, D.C. 20233**

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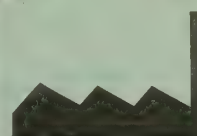
**OFFICIAL BUSINESS**

**POSTAGE AND FEES PAID  
U.S. DEPARTMENT OF COMMERCE**





# 1967 CENSUS OF MANUFACTURES



MC67(P)-35E-6

## INDUSTRY SERIES

**preliminary  
report**

### Industrial furnaces and ovens

SIC Code 3567

The Industrial Process Furnaces and Ovens Industry includes establishments primarily engaged in manufacturing industrial process furnaces, ovens, induction and dielectric heating equipment and related devices.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Industrial Furnaces and Ovens Industry amounted to \$472.7 million, an increase of 70 percent compared with 1963. Value added by manufacture at \$244.5 million in 1967 was 71

percent more than value added in 1963. Average employment in the industry showed an increase of 25 percent from 1963 to a total of 15.0 thousand employees in 1967.

Of the \$472.7 million total value of shipments and other receipts of establishments classified as industrial furnaces and ovens, \$41 million were products primary to other industries; and \$76 million were receipts for miscellaneous activities. The industry shipments of primary products represented 90 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 83 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)							
	INDUSTRY 3567.--INDUSTRIAL FURNACES AND OVENS													
1967 Census....	256	118	15.0	122.0	8.1	16.7	53.6	244.5	230.6	472.7	15.2	63.1	90	90
1966 ASM <sup>1</sup> .....	(NA)	(NA)	14.3	112.2	8.0	17.7	52.4	212.9	199.1	401.0	5.4	61.8	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	12.9	102.4	7.3	16.2	46.8	193.9	164.3	349.4	6.6	51.9	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	12.3	93.0	6.9	15.2	41.5	169.7	158.3	324.0	4.0	44.9	(NA)	(NA)
1963 Census....	238	93	12.1	83.7	6.8	14.0	38.7	143.0	137.7	279.1	4.6	41.1	83	85
1962 ASM <sup>1</sup> .....	(NA)	(NA)	11.1	72.3	6.2	13.0	33.7	117.5	121.2	238.0	2.3	30.8	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	10.7	69.9	5.9	12.7	31.5	115.7	107.9	225.1	*2.7	29.3	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	11.3	71.0	6.3	13.5	33.5	124.8	129.6	259.8	2.1	30.2	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	11.0	65.1	6.4	13.3	31.6	114.6	113.0	222.5	(S)	33.9	(NA)	(NA)
1958 Census <sup>2</sup> ....	201	89	10.3	57.4	5.8	11.7	26.9	96.4	101.8	204.8	2.9	30.3	85	83

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

(S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 2 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in Table 1 of the chapter devoted to this industry.

Issued December 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

Harold C. Passer, Assistant Secretary for Economic Affairs

**BUREAU OF THE CENSUS** George Hay Brown, Director



The total value of industrial furnaces and ovens shipped by all producers in 1967 was \$395.5 million of which \$356 million, or 90 percent, were shipped by plants classified in industry 3567, Industrial Furnaces and Ovens, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 85 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
INDUSTRY 3567.--INDUSTRIAL FURNACES AND OVENS													
United States, total.....	256	118	15.0	122.0	8.1	16.7	53.6	244.5	230.6	472.7	15.2	12.1	143.0
New England.....	27	15	1.4	11.2	0.8	1.7	5.2	16.7	16.8	34.3	0.5	1.2	13.5
Massachusetts.....	13	7	0.7	5.5	0.4	0.9	2.7	7.1	8.6	16.2	0.2	0.8	9.5
Connecticut.....	9	4	0.4	3.2	0.3	0.5	1.5	5.7	4.7	10.4	0.2	(D)	(D)
Middle Atlantic.....	65	32	3.8	35.6	1.7	3.6	11.4	68.7	59.9	128.5	2.0	4.2	50.7
New York.....	15	5	0.5	3.7	0.3	0.7	2.0	6.9	4.0	10.8	0.1	0.8	8.1
New Jersey.....	25	13	0.9	7.3	0.6	1.3	4.4	15.4	14.6	30.0	0.5	1.3	13.5
Pennsylvania.....	25	14	2.4	24.6	0.7	1.6	5.0	46.5	41.3	87.6	1.3	2.2	29.1
East North Central.....	97	51	7.9	60.8	4.4	9.0	28.4	124.9	130.1	252.4	8.7	5.4	64.6
Illinois.....	22	14	2.3	16.9	1.3	2.6	7.7	30.1	22.6	52.2	1.2	1.4	16.5
Michigan.....	31	13	0.7	6.5	0.5	1.1	3.9	12.7	11.9	24.6	1.5	0.6	7.2
West North Central.....	12	4	0.6	4.3	0.3	0.7	2.1	8.4	6.7	15.5	0.2	0.4	4.8
South.....	15	5	0.3	2.5	0.2	0.5	1.6	12.6	8.3	19.2	2.9	0.1	1.6
West.....	40	11	0.9	7.7	0.6	1.3	4.9	13.3	8.8	22.9	0.9	0.8	7.8
California.....	34	9	0.8	6.6	0.5	1.1	4.2	11.6	7.9	20.3	(D)	0.6	6.2

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (number of units)	Value (million dollars)	Quantity (number of units)	Value (million dollars)
3567- --	INDUSTRIAL FURNACES AND OVENS, TOTAL <sup>1</sup> .....	(X)	395.5	(X)	237.7
35671 --	Electric industrial furnaces and ovens, metal processing, total.....	(X)	90.8	(X)	44.7
	Electric furnaces, excluding induction:				
35671 11	Metal melting.....	<sup>e</sup> 457	19.8	<sup>r</sup> 204	<sup>r</sup> 8.4
35671 21	Metal processing and heat treating (such as annealing, hardening, carburizing, and porcelain enameling furnaces).....	<sup>e</sup> 2,264	46.2	<sup>r</sup> 1,994	<sup>r</sup> 26.6
35671 43	Electric, including infrared industrial ovens.....	(NA)	22.8	<sup>r</sup> 11,057	<sup>r</sup> 9.3
35671 00	Electric industrial furnaces and ovens, metal processing, n.s.k.....	(X)	2.0	(X)	0.5
35672 --	Fuel-fired industrial furnaces and ovens, metal processing, total.....	(X)	155.4	(X)	76.6
35671 11	Metal melting, including blast furnaces and cupolas.....	1,397	16.9	<sup>r</sup> 599	<sup>r</sup> 8.4
35672 21	Metal processing and heat treating (such as annealing, hardening, carburizing, and porcelain enameling furnaces).....	3,535	93.0	<sup>r</sup> 1,747	<sup>r</sup> 40.6
35672 41	Industrial ovens.....	3,471	28.6	<sup>r</sup> 2,084	<sup>r</sup> 10.6
35672 61	Hot rolling, forging, forming, and extruding furnaces and ovens.....	(NA)	14.6	(NA)	<sup>r</sup> 16.3
35672 00	Fuel-fired industrial furnaces and ovens, metal processing.....	(X)	2.3	(X)	0.8
35673 --	High frequency induction and dielectric heating equipment and parts, attachments and components, total.....	(X)	129.0	(X)	109.9
	Induction furnaces and heating equipment:				
35673 13	Radio frequency types including spark gap.....	(NA)	17.9	1,110	7.7
35673 15	Line and motor-generators set frequency types.....	(NA)	9.9	(NA)	11.0
	Other electrical equipment for industrial use, except soldering irons: Industrial electric heating units and devices (except heating units for electric furnaces):				
35673 31	Dielectric heating equipment.....	(X)	6.2	(X)	<sup>r</sup> 15.0
35673 51	Tubular heating.....	(X)	6.4	(X)	<sup>r</sup> 5.2
35673 59	All other industrial electric heating units and devices (including strip, space, and ring heaters; water and all immersion heaters; glue and compound pots; etc.).....	(X)	23.6	(X)	24.7
35673 91	Parts, attachments, and components for industrial furnaces and ovens, including electric heating units (sold separately).....	(X)	59.2	(X)	45.3
35673 00	High frequency induction and dielectric heating equipment and parts, attachments and components, n.s.k.....	(X)	5.8	(X)	1.0
35670 00	Industrial process furnaces and ovens, n.s.k. (For companies with 10 or more employees. (See Note.).....	(X)	16.3	}	6.5
35670 02	Industrial process furnaces and ovens, n.s.k. (For companies with less than 10 employees. (See Note.).....	(X)	4.0		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

<sup>e</sup>From 10 to 30 percent of this figure was estimated. (NA) Not available. n.s.k. Not specified by kind. <sup>r</sup>Revised. (X) Not applicable.

<sup>1</sup>Represents shipments of industrial furnaces and ovens produced by manufacturing establishments only. Does not include industrial furnaces and ovens erected at the site by engineering and construction firms which purchase component parts for such furnaces and ovens.

## 1967 CENSUS OF MANUFACTURES

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3567.--INDUSTRIAL FURNACES AND OVENS					
	Materials, components, parts, containers, and supplies, total.		(X)	195.7	(X)	113.0
	Mill shapes and forms (except castings):					
	Carbon steel:					
331012	Sheet and strip.....	1,000 short tons..	27.0	4.6	38.5	5.9
331013	Plates.....	..do.....	57.8	9.9	38.5	3.0
331015	Structural shapes.....	..do.....	28.0	5.0	8.8	1.5
331019	All other carbon steel mill shapes and forms.....	..do.....	11.6	3.4	6.2	1.6
331020	Alloy steel (except stainless).....	..do.....	12.4	20.3	1.1	0.9
331031	Stainless steel.....	..do.....			3.7	7.2
	Copper and copper-base alloy:					
335102	Rod, bar, and mechanical wire, including extruded and/ or drawn shapes.....	Million lbs.....	5.9	4.7	0.4	0.3
335123	Plate, sheet, and strip, including military cups and discs...	..do.....			0.4	0.3
335127	Pipe and tube.....	..do.....			3.9	3.1
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	..do.....	(NA)	4.4	3.7	1.9
335205	Extruded shapes (including extruded rod, bar, pipe, tube, etc.).....	..do.....			0.4	0.4
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	..do.....			0.1	(Z)
332300	Steel castings (rough and semifinished) <sup>1</sup> .....	1,000 short tons..	5.2	3.0	5.8	3.3
970099	All other materials and components, parts, components, parts, containers, and supplies consumed.....		(X)	110.3	(X)	63.5
976000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> .....		(X)	30.1	(X)	20.0

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable. (Z) Less than 0.1 when rounded.

<sup>1</sup>No data are available on the quantities of steel castings produced and consumed in the same establishment.<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

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This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3567 these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the month specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

**U.S. DEPARTMENT OF COMMERCE**  
**Bureau of the Census**  
Washington, D.C. 20233

POSTAGE AND FEES PAID  
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OFFICIAL BUSINESS



# 1967 CENSUS OF MANUFACTURES



MC67(P)-35E-7

INDUSTRY SERIES

**preliminary  
report**

## General industry machinery, n.e.c.

SIC Code 3569

The General Industrial Machinery and Equipment, Not Elsewhere Classified, Industry includes establishments primarily engaged in manufacturing machinery, equipment, and components for general industrial use, and for which no special classification is provided. Machine shops primarily engaged in producing machine and equipment parts, usually on a job or order basis, are classified in industry 3599.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classi-

fied in the General Industrial Machinery, N.E.C., Industry amounted to \$908.1 million, an increase of 31 percent compared with 1963. Value added by manufacture at \$539.8 million in 1967 was 27 percent more than value added in 1963. Average employment in the industry showed an increase of 8 percent from 1963 to a total of 39.3 thousand employees in 1967.

Of the \$908.1 million total value of shipments and other receipts of establishments classified as general industrial machinery, n.e.c., \$126 million were products primary to other industries; and \$65 million were receipts for miscellaneous activities. The industry shipments of primary products represented 85 percent of the total manufactured product shipments, primary

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)							
INDUSTRY 3569.--GENERAL INDUSTRIAL MACHINERY, N.E.C.														
1967 Census....	758	346	39.3	295.0	25.5	52.3	163.5	539.8	382.6	908.1	30.6	195.4	85	80
1966 ASM <sup>1</sup> .....	(NA)	(NA)	41.0	308.3	25.5	52.9	156.6	638.8	420.5	1,024.1	34.5	189.3	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	38.9	278.4	23.4	47.9	135.6	517.4	347.4	855.6	27.5	153.4	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	36.7	264.2	20.6	43.5	117.9	436.9	284.2	708.6	19.4	143.3	(NA)	(NA)
1963 Census....	777	277	35.6	240.8	20.3	40.9	109.4	424.1	272.7	691.3	15.1	123.4	83	70
1962 ASM <sup>1</sup> .....	(NA)	(NA)	33.0	219.1	19.2	36.7	92.9	284.4	314.9	609.4	*20.4	94.9	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	30.6	200.6	17.2	33.9	86.2	256.9	297.4	572.2	20.1	89.6	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	29.5	185.8	16.6	33.4	82.1	261.6	252.3	549.9	18.7	94.8	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	28.9	175.6	16.9	33.2	80.5	306.9	207.6	496.2	20.2	124.9	(NA)	(NA)
1958 Census <sup>2</sup> ...	584	209	28.0	159.9	16.1	31.8	75.6	281.4	189.8	458.3	17.3	104.0	87	74

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 2 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued December 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

Harold C. Passer, Assistant Secretary for Economic Affairs

BUREAU OF THE CENSUS George Hay Brown, Director

and secondary. This percent, called the specialization ratio for the industry, was 83 percent in 1963.

The total value of general industrial machinery, n.e.c., shipped by all producers in 1967 was \$899.5 million of which \$717 million, or 80 percent, were shipped by plants classified in industry 3569, General Industrial Machinery, N.E.C., while the remainder was shipped by plants classified in

other industries. This percent, called the coverage ratio, was 70 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3569.--GENERAL INDUSTRIAL MACHINERY, N.E.C.													
United States, total.....	758	346	39.3	295.0	25.5	52.3	163.5	539.8	382.6	908.1	30.6	35.6	424.1
New England.....	72	37	4.3	31.8	2.7	5.6	17.0	55.6	42.0	97.9	3.9	3.4	55.8
Connecticut.....	28	16	2.3	17.3	1.4	3.0	9.0	29.8	25.5	56.5	2.1	1.9	42.8
Middle Atlantic.....	195	92	11.1	85.4	6.5	13.5	43.5	143.7	104.3	242.5	9.9	10.1	106.1
New York.....	83	33	4.8	38.4	2.4	4.9	17.0	62.0	38.6	100.0	3.2	5.1	49.2
New Jersey.....	53	25	2.2	16.6	1.4	2.9	8.5	28.6	28.6	57.0	2.2	1.6	19.2
Pennsylvania.....	59	34	4.0	30.4	2.7	5.7	17.9	53.1	37.2	85.5	4.6	3.4	37.7
East North Central....	238	117	13.9	109.4	9.4	19.4	64.0	211.9	137.8	345.6	11.3	9.3	107.3
Ohio.....	49	20	3.0	23.0	1.7	3.6	12.4	45.3	23.6	68.1	3.1	2.5	26.5
Indiana.....	20	12	2.0	15.8	1.5	3.0	9.2	29.0	24.9	52.9	1.3	1.3	13.2
Illinois.....	82	37	3.7	29.3	2.6	5.5	18.3	55.7	35.3	88.5	4.5	1.7	23.8
Michigan.....	57	29	2.3	19.3	1.6	3.4	11.5	35.1	25.6	61.3	1.3	2.5	27.0
Wisconsin.....	30	19	2.9	22.1	1.9	3.9	12.6	46.8	28.4	74.8	1.2	1.3	16.9
West North Central....	41	17	1.2	8.5	0.9	1.7	5.2	17.1	12.8	30.2	0.9	1.7	19.1
Minnesota.....	12	6	0.5	3.4	0.3	0.6	2.0	7.3	4.1	11.3	0.2	0.7	7.6
Iowa.....	10	3	0.2	1.4	0.2	0.3	0.8	2.3	2.4	4.7	0.3	0.5	6.1
Missouri.....	8	4	0.3	1.8	0.2	0.4	1.3	3.4	2.6	6.0	0.1	0.1	0.9
South Atlantic.....	43	18	1.3	7.9	1.0	2.0	4.6	19.0	16.0	33.3	1.1	0.7	7.9
Maryland.....	9	3	0.2	1.2	0.2	0.3	0.8	2.3	2.7	5.0	0.1	(D)	(D)
North Carolina.....	8	4	0.4	2.1	0.3	0.6	1.3	5.6	7.5	13.0	0.5	0.1	1.5
Florida.....	14	3	0.2	1.6	0.2	0.3	0.8	2.7	1.0	3.6	0.1	0.1	1.4
East South Central....	20	7	1.3	8.1	1.0	2.0	5.1	15.9	11.8	26.6	0.5	1.0	10.3
West South Central....	36	16	1.5	10.3	1.0	2.0	5.2	17.0	14.4	31.0	0.7	0.8	12.2
Texas.....	25	10	0.9	5.1	0.6	1.3	3.1	9.1	8.0	17.0	0.4	0.4	5.3
West.....	113	43	4.6	33.6	3.1	6.0	18.9	59.6	43.4	101.0	2.2	8.6	105.3
California.....	92	34	2.8	19.3	1.9	3.8	11.2	37.0	26.0	62.6	(D)	8.0	95.7

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (number of units)	Value (million dollars)	Quantity (number of units)	Value (million dollars)
3569- --	GENERAL INDUSTRIAL MACHINERY, N.E.C., TOTAL.....	(X)	899.5	(X)	664.3
	Packaging and wrapping machines (except for food, tobacco, liquor, wine, beer, and dairy products):				
35690 12	Filling-capping machines, including collapsible tube filling, closing, sealing machines.....	1,507	6.7	1,379	4.8
35690 13	Aerosol packaging machines.....	(NA)	7.0		
35690 14	Bag and pouch forming, filling, and sealing machines.....	4,041	20.6	6,538	22.0
35690 19	Other wrapping and packaging machinery, such as bundling, banding, unit packaging and tablet wadding.....	(NA)	64.2	(NA)	31.6
35690 25	Box, case, carton, and tray setting up, loading, lining, closing, and sealing machines.....	1,719	20.6	726	6.7
35690 26	Labeling and marking machines (except for food, tobacco, liquor, beer, wine, and dairy products).....	(NA)	19.9	3,716	7.8
	General industrial machinery and equipment, n.e.c.:				
35690 31	Gas generating equipment.....	(X)	21.8	(X)	19.6
35690 43	Filters, except internal combustion engine filters and air filters for furnaces and air conditioning equipment.....	(NA)	168.1	(NA)	120.3
35690 45	Strainers.....	(NA)	20.0	(NA)	
35690 51	Centrifugals and separators, except cream, grain, and berry separators..	(NA)	28.8	(NA)	20.7
35690 73	Hydraulic jacks.....	(NA)	24.2	76,891	20.0
35690 71	Pneumatic jacks.....				
35690 61	Automatic fire sprinkler equipment.....	(X)	19.3	(X)	351.2
35690 98	All other general industrial machinery and equipment.....	(NA)	344.6		
35690 00	General industrial machinery, n.s.k. (For companies with 10 or more employees. See Note.).....	(X)	121.5		
35690 02	General industrial machinery, n.s.k. (For companies with less than 10 employees. See Note.).....	(X)	12.2	(X)	59.4

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.e.c. Not elsewhere classified. n.s.k. Not specified by kind. <sup>r</sup>Revised. (X) Not applicable.

## 1967 CENSUS OF MANUFACTURES

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3569.--GENERAL INDUSTRIAL MACHINERY, N.E.C.					
	Materials, components, parts, containers, and supplies, total		(X)	331.9	(X)	222.5
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	Thousand short tons.....	41.3	9.3	40.6	7.4
331012	Sheet and strip.....	..do.....	28.6	5.2	30.9	5.3
331013	Plates.....	..do.....	40.0	7.4	22.0	3.7
331015	Structural shapes.....	..do.....	22.8	4.6	13.3	2.5
331017	Wire and wire products.....	..do.....	(NA)	0.8	1.5	0.8
331019	All other carbon steel mill shapes and forms.....	..do.....	16.9	1.9	14.2	3.3
	Alloy steel (except stainless):					
331021	Bar and bar shapes.....	..do.....	5.3	2.3	3.4	1.4
331029	All other alloy steel mill shapes and forms.....	..do.....	5.2	2.8	3.3	1.6
331031	Stainless steel.....	..do.....	5.5	9.6	4.5	7.0
	Copper and copper-base alloy:					
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	1.2	1.0	1.0	0.7
335123	Plate, sheet, and strip, including military cups and discs..	..do.....	(NA)	1.0	0.9	0.9
335127	Pipe and tube.....	..do.....	(2)	(2)	1.3	0.7
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	..do.....	3.5	2.1	4.7	2.6
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc	..do.....	(NA)	1.0	1.6	1.9
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	..do.....	(NA)	1.5	1.5	1.3
331051	Pig iron excluding silvery iron.....	Thousand short tons.....	(3)	(3)	0.5	(2)
999811	Iron and steel scrap (excluding home scrap).....	..do.....	(3)	(3)	2.4	0.1
	Castings (rough and semifinished):					
332011	Iron (gray and malleable).....	..do.....	21.2	10.4	13.7	6.3
332300	Steel.....	..do.....	5.1	5.1	2.5	2.2
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	(NA)	3.3	1.4	1.0
336200	Copper and copper-base alloy.....	..do.....	4.2	4.3	2.4	2.0
	Electric motors and generators: <sup>1</sup>					
362115	Fractional horsepower electric motors (under 1 hp.) (excluding timing motors).....	Thousands.....	124.0	4.8	51.2	1.9
362120	Integral horsepower motors and generators (1 hp. and over)....	..do.....	23.6	2.9	18.6	2.1
	Bearings:					
356218	Ball.....	..do.....	(X)	1.0	(X)	0.9
356201	Roller.....	..do.....	(X)	0.7	(X)	0.3
970099	All other materials and components, parts, containers, and supplies consumed.....	..do.....	(X)	170.7	(X)	115.5
976000	Materials, parts, containers, and supplies, n.s.k. <sup>4</sup> .....	..do.....	(X)	78.2	(X)	49.0

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable. (Z) Less than \$50 thousand.

<sup>1</sup>These figures are understated by \$5 million or less because of apparent undercoverage of carbon steel pipe and tube.<sup>2</sup>Included with material code 970099, "All other materials and components, etc."<sup>3</sup>Included with material code 970099, "All other materials and components, etc." to avoid disclosing figures for individual companies.<sup>4</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

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As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

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# Appendix

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*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

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In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

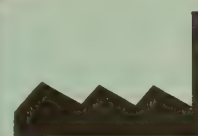
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-35F-1

## INDUSTRY SERIES

### Typewriters

SIC Code 3572

**preliminary  
report**

The Typewriters Industry includes establishments primarily engaged in manufacturing typewriters and parts.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Typewriter Industry amounted to \$596 million, an increase of 89 percent compared with 1963. Value added by manufacture at \$455 million in 1967 was 87 percent more than value added in 1963. Average employment in the industry showed an increase of 44 percent from 1963 to a total of 26 thousand employees in 1967.

Of the \$596 million total value of shipments and other receipts of establishments classified as typewriters, \$83 million were products primary to other industries; and \$11 million were receipts for miscellaneous activities. The industry shipments of primary products represented 86 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 85 percent in 1963.

The total value of typewriters shipped by all producers in 1967 was \$507 million of which \$502 million, or 99 percent, were shipped by plants classified in industry 3572, Typewriters, while the remainder was shipped by plants classified in

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3572.--TYPEWRITERS														
1967 Census....	25	17	26.0	172.3	19.9	39.3	116.7	455.0	155.3	596.0	20.1	114.0	86	99
1966 ASM <sup>1</sup> .....	(NA)	(NA)	21.9	145.3	17.0	34.7	97.1	424.1	136.4	533.9	19.6	94.7	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	18.6	116.6	14.0	27.3	74.2	298.3	98.6	395.6	12.5	65.1	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	17.7	108.8	13.4	26.2	71.3	288.2	91.8	379.4	9.1	61.3	(NA)	(NA)
1963 Census.....	21	16	18.0	102.9	13.9	27.1	71.1	243.2	79.6	315.4	9.6	65.2	85	99
1962 ASM <sup>1</sup> .....	(NA)	(NA)	17.8	96.7	14.0	27.5	69.3	206.9	79.7	290.7	10.1	55.1	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	18.5	93.8	14.8	28.7	68.1	195.8	75.4	270.5	8.3	58.3	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	19.1	93.0	15.3	29.7	68.1	201.2	75.5	283.0	10.3	55.1	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	19.7	93.6	16.1	31.3	71.6	188.7	71.8	265.4	7.4	60.8	(NA)	(NA)
1958 Census <sup>2</sup> ....	18	13	19.8	84.5	16.3	29.7	64.6	168.9	67.7	238.2	9.9	64.4	82	99

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued November 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary  
 Rocco C. Siciliano, Under Secretary  
 Harold C. Passer, Assistant Secretary for Economic Affairs  
**BUREAU OF THE CENSUS** George Hay Brown, Director

other industries. This percent, called the coverage ratio, was also 99 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1,

2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

#### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3572, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-35R, Office, Computing, and Accounting Machines. In addition monthly data appear in the Current Industrial Reports Series: M35C, Typewriters.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(Geographic data for this industry will not be published separately)

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (number of units)	Value (million dollars)	Quantity (number of units)	Value (million dollars)
3572- --	TYPEWRITERS, TOTAL.....	(X)	507.4	(X)	265.5
35720 --	Typewriters, including coded media, and parts and attachments produced by complete machine manufacturers:				
	As reported in the census of manufactures <sup>1</sup> .....	(X)	499.7	(X)	263.8
	As reported on Census Annual Form MA-35R and monthly Form M35C <sup>1</sup> .....	(X)	486.6	(X)	260.4
	Standard (nonportable): <sup>2</sup>				
35720 01	Electric.....	682.7	200.2	447.7	123.9
35720 03	Nonelectric.....	378.9	55.5	355.6	49.6
35720 05	Standard Portable (including electric).....	866.7	180.3	503.3	70.6
35720 12	Specialized typewriters and typewriter principle machines <sup>3</sup> .....				
	Parts and attachments for typewriters, sold separately:				
35720 40	Produced by complete machine manufacturers.....	(X)	50.6	(X)	16.3
35720 51	Parts and attachments for typewriters produced by other than complete machine manufacturers.....	(X)	4.8	(X)	1.7
35720 00	Typewriters, n.s.k. (For companies with 10 or more employees. See Note.).....	(X)	2.8		
35720 02	Typewriters, n.s.k. (For companies with less than 10 employees. See Note.).....	(X)	0.1	(X)	-

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

-Represents zero. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>For these products, data were also collected on Annual Form MA-35R, Office, Computing and Accounting Machines. In lieu of asking for detailed statistics on these products in the census of manufactures, respondents were asked to report only value of shipments for specified classes of products for which separate figures had previously been collected on the annual form. In most cases, the value figures reported in the census of manufactures for each class of products agreed closely with the corresponding figures reported in the annual survey. However, there were some differences between the census figures and the annual survey figures. These variations were due primarily to the following reasons:

- Use of different reporting periods (calendar year vs. fiscal year.)
- Use of different bases for reporting value (company sales vs. factory production.)
- Use of estimates in reporting data on the annual survey, whereas census of manufactures figures generally represent more exact shipments figures.

<sup>2</sup>Data on typewriters are also published monthly in Current Industrial Reports Series M35C, Typewriters.

<sup>3</sup>Includes standard portable typewriters and specialized typewriters such as specialized composing typewriters, coded media typewriters, and input/output typewriters.



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
INDUSTRY 3572.--TYPEWRITERS						
	Materials, parts, containers, and supplies, total.....		(X)	146.7	(X)	73.9
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	30.6	9.1	5.9	1.5
331012	Sheet and strip.....	..do.			20.2	5.3
331017	Wire and wire products.....	..do.			1.7	0.4
331015	Structural shapes.....	..do.			0.8	0.3
331019	All other carbon steel mill shapes and forms.....	..do.				
331020	Alloy steel (except stainless).....	..do.			0.5	0.3
331031	Stainless steel.....	..do.			0.1	0.2
	Copper and copper-base alloy:					
335728	Bare wire (For electrical conduction only).....	million lbs.	(D)	(D)	(NA)	(NA)
335790	Insulated wire and cable.....	million lbs. copper content..	(D)	(D)	(D)	(D)
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	million lbs.	(D)	(D)	(D)	(D)
335123	Plate, sheet, and strip (including military cups and discs).. <td>..do.</td>	..do.				
335127	Pipe and tube.....	..do.				
	Aluminum and aluminum-base alloy:					
335205	Extruded shapes (including extruded rod, bar, pipe, tube, etc.).....	..do.	2.2	2.0	0.8	0.7
335202	Sheet, plate, and foil.....	..do.			0.6	0.3
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar powder, welded tubing).....	..do.				
	Castings (rough and semifinished):					
332300	Steel.....	1,000 short tons.	1.2	0.7	3.0	1.5
336100	Aluminum and aluminum-base alloy.....	million lbs.	1.8	1.9	4.5	3.7
	Electric motors and generators:					
	Fractional horsepower electric motors (under 1 hp.):					
362110	Timing motors, synchronous and subsynchronous.....	1,000.....	1,359.9	5.8	(D)	(D)
362115	Fractional horsepower electric motors (excluding timing motors).....	..do.			688.3	4.1
362120	Integral horsepower motors and generators (1 h.p. and over)....	..do.	-	-	(NA)	(NA)
	Bearings:					
356218	Ball.....		(X)	(D)	(X)	0.5
356201	Roller.....					
367010	Electron tubes, except X-ray.....	million.....	(D)	(D)	(D)	(D)
367408	Solid state semiconductors.....	..do.	(D)	(D)	(D)	(D)
367901	Resistors, capacitors, transformers, sockets, and other electronic components and accessories, except solid state semi- conductors.....		(X)	(D)	(X)	(NA)
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	95.2	(X)	53.7
976000	Materials and components, n.s.k.....		(X)	32.0	(X)	1.5

- Represents zero. (NA) Not available. n.s.k. Not specified by kind.

(D) Included with material code 970099, "All other materials, etc." to avoid disclosing figures of individual companies.

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Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

**U.S. DEPARTMENT OF COMMERCE**  
**Bureau of the Census**  
Washington, D.C. 20233

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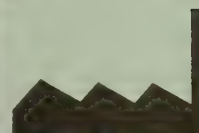
OFFICIAL BUSINESS





# 1967 CENSUS OF MANUFACTURES

MC67(P)-35F-2



## INDUSTRY SERIES

### Electronic computing equipment and Calculating and accounting machines

SIC Codes 3573 and 3574

**preliminary  
report**

The Electronic Computer Equipment Industry includes establishments primarily engaged in manufacturing electronic computers and/or major logical components intended for use in electronic computer systems. Included are general-purpose electronic analog computers as well as electronic digital computers. The electronic computers may be used for data processing or may be incorporated

as components into control equipment for industrial use, and as components of equipment used in weapons and weapons systems, space and oceanographic exploration, transportation, and other systems. Electronic computer systems contain high speed arithmetic and program control units, on-line information storage devices and input/output equipment. Examples of input/output

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)							
INDUSTRY 3573. --ELECTRONIC COMPUTER EQUIPMENT														
1967 Census,...	175	139	98.2	798.3	50.3	103.5	312.6	1,920.7	<sup>3</sup> 1,869.6	<sup>3</sup> 3,760.8	116.6	980.8	( <sup>3</sup> )	( <sup>3</sup> )
INDUSTRY 3574. --CALCULATING AND ACCOUNTING MACHINES														
1967 Census,...	138	51	38.4	294.4	31.3	58.6	219.7	518.2	198.2	707.8	32.6	206.8	83	83
INDUSTRIES 3573 AND 3574 (PREVIOUSLY IDENTIFIED AS SIC CODE 3571 COMPUTING AND RELATED MACHINES)														
1967 Census,...	313	190	136.6	1,092.7	81.6	162.1	532.3	2,438.9	<sup>3</sup> 2,067.8	<sup>3</sup> 4,468.6	149.2	1,187.6	(NA)	(NA)
1966 ASM <sup>1</sup> .....	(NA)	(NA)	136.4	1,078.3	81.3	169.6	540.2	<sup>2</sup> 2,264.9	<sup>2</sup> 2,735.9	<sup>3</sup> 4,832.8	162.4	1,227.4	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	115.0	907.5	68.7	141.6	458.6	1,820.9	<sup>3</sup> 1,793.0	<sup>3</sup> 3,352.5	144.4	1,008.2	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	102.8	775.7	62.7	128.8	395.6	<sup>2</sup> 1,476.7	<sup>2</sup> 1,569.4	<sup>3</sup> 3,011.4	89.1	862.2	(NA)	(NA)
1963 Census <sup>2</sup> ....	248	139	96.4	703.2	59.0	119.5	369.5	<sup>2</sup> 1,286.1	<sup>2</sup> 1,446.4	<sup>3</sup> 2,739.5	92.6	653.5	( <sup>3</sup> )	( <sup>3</sup> )

<sup>1</sup>Revised.

<sup>2</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>3</sup>Comparable data for value added by manufacture, cost of materials, and value of shipments are not available for years prior to 1963. For other items, comparable data prior to 1963 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

<sup>4</sup>The value of shipments and cost of materials for this industry includes extensive duplication arising from shipments between establishments in the same industry classification. Accordingly, the specialization ratios and coverage ratios are not shown. For further explanation see introductory text.

Issued January 1970

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

Harold C. Passer, Assistant Secretary for Economic Affairs

BUREAU OF THE CENSUS George Hay Brown, Director



equipment are converters (card and/or tape), readers and printers. Examples of storage devices are magnetic drums and disks, magnetic cores and magnetic film memories. In addition to providing technical manuals necessary for the operation and maintenance of the equipment, establishments in this industry usually furnish general-purpose computer programs and basic operating systems programs needed for effective use of the computer system. Establishments primarily producing rebuilt electronic computers are also included in this industry. Establishments primarily engaged in manufacturing desk calculators, cash registers, accounting machines and similar equipment, typically electrical or mechanical, are classified in industry 3574; electrical and electronic test equipment in industry 3611; industrial controls, including electronic, in industry 3622; and industrial process instruments in industry 3821.

The Calculating and Accounting Machines, Except Electronic Computing Equipment Industry includes establishments primarily engaged in manufacturing desk calculators, adding and accounting machines, cash registers, and similar equipment, except electronic computers. Establishments primarily engaged in manufacturing electronic computing equipment are classified in industry 3573; typewriters in industry 3572; and office duplicating machines and devices, autographic registers, and other office machines in industry 3579.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Electronic Computing Equipment Industry amounted to \$3,761 million. Value added by manufacture was \$1,921 million in 1967. Average employment in the industry totaled 98 thousand employees.

In 1967 the value of products shipped and miscellaneous receipts of establishments classified in the Calculating and Accounting Machines Industry amounted to \$708 million. Value added by manufacture was \$518 million in 1967. Average employment in the industry totaled 38 thousand employees.

#### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industries 3573 and 3574, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports Series:

MA-35R, Office Computing, and Accounting Machines.

Of the \$3,761 million total value of shipments and other receipts of establishments classified as electronic computing equipment, \$144 million were products primary to other industries; and \$97 million were receipts for miscellaneous activities.

The total value of electronic computing equipment shipped by all producers in 1967 was \$4,046 million of which \$3,520 million were shipped by plants classified in industry 3573, Electronic Computing Equipment, while the remainder was shipped by plants classified in other industries.

The total cost of materials and total value of shipments of the Electronic Computing Equipment Industry include extensive duplication resulting from the intra-industry shipments of certain products by some establishments for use as materials by others. For this reason, the "primary product specialization ratio," a measure of the extent to which plants classified in an industry "specialize" in making the products regarded as primary to the industry, has not been computed precisely. The ratio, however, is between 90 and 100. Since this duplication is also included in the value of shipments shown in table 3, the coverage ratio for this industry has not been computed.

Of the \$708 million total value of shipments and other receipts of establishments classified as calculating and accounting machines, \$105 million were products primary to other industries; and \$80 million were receipts for miscellaneous activities. The industry shipments of primary products represented 83 percent of the total manufactured product shipments, primary and secondary. This percentage is called the specialization ratio for the industry.

The total value of calculating and accounting machines shipped by all producers in 1967 was \$631 million of which \$523 million, or 83 percent, were shipped by plants classified in industry 3574, Calculating and Accounting Machines, while the remainder was shipped by plants classified in other industries. This percentage is called the coverage ratio for the industry.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

## 1967 CENSUS OF MANUFACTURES

3

TABLE 2. General Statistics, by Geographic Areas: 1967

(See appendix, "Explanation of Terms")

(See appendix, "Explanation of Terms")

Geographic area	1967										
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)				
INDUSTRY 3573. --ELECTRONIC COMPUTER EQUIPMENT											
United States, total.....	175	139	98.2	798.3	50.3	103.5	312.6	1,920.7	1,869.6	13,760.8	116.6
Middle Atlantic.....	41	38	25.8	208.6	14.5	29.6	94.8	431.2	684.3	1,105.0	22.0
North Central:											
Michigan.....	7	5	2.4	19.0	1.4	2.7	9.3	27.5	29.3	49.2	2.8
West North Central.....	12	11	18.8	154.4	8.6	18.6	55.9	411.4	300.1	682.7	14.7
West.....	59	43	31.5	273.4	14.2	29.5	89.0	550.8	525.2	1,094.7	58.0
INDUSTRY 3574. --CALCULATING AND ACCOUNTING MACHINES											
United States, total.....	138	51	38.4	294.4	31.3	58.6	219.7	518.2	198.2	707.8	32.6
Northeast.....	47	14	2.6	15.8	2.1	4.2	11.1	30.5	14.9	43.5	1.7
New England.....	18	6	0.7	4.2	0.6	1.0	2.5	9.3	6.5	14.7	0.7
Massachusetts.....	10	4	0.6	3.3	0.4	0.7	2.0	7.2	5.3	11.6	(D)
Middle Atlantic.....	29	8	1.9	11.6	1.6	3.2	8.6	21.2	8.4	28.8	1.0
West.....	37	15	4.3	28.4	3.0	5.4	15.2	48.6	31.0	84.8	7.8

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

Comparable data on a geographic basis for 1963 are not available.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

<sup>1</sup>See footnote 3, table 1.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (number of units)	Value (million dollars)	Quantity (number of units)	Value (million dollars)
3573- --	ELECTRONIC COMPUTING EQUIPMENT, TOTAL.....	(X)	14,045.7	(X)	<sup>r1</sup> 22,468.4
	Electronic computing equipment, except parts and attachments:				
35731 00	As reported in the census of manufactures <sup>3</sup> .....	(X)	3,122.8	(X)	<sup>r</sup> 22,338.3
	As reported on Census annual Form MA-35R.....	(X)	<sup>r</sup> 2,946.3	(X)	<sup>r</sup> 22,309.7
	Electronic computing equipment, excluding typewriters, except parts and attachments: <sup>4</sup>				
	Digital:				
35731 11	General purpose.....	(NA)	<sup>r</sup> 1,905.0	(NA)	<sup>r</sup> 1,074.3
35731 13	All other.....			(NA)	48.0
	Analog:				
35731 21	General purpose.....	(NA)	<sup>r</sup> 67.8	(NA)	
35731 23	All other.....			(NA)	39.7
	Coded (stored) media data processing machines, other than punched card, sold separately:				
35731 31	Accounting, bookkeeping, and billing machines, including cash registers, key operated.....				
35631 33	Adding machines.....	(X)	<sup>r</sup> 931.4	(NA)	<sup>r</sup> 322.3
35731 35	Calculating machines.....				
35731 39	Coded (stored) media data processing machines, n.e.c.....				
35731 41	Punched card system machines.....			(X)	( <sup>5</sup> )
35731 98	Other electronic computing equipment, n.e.c., including rebuilt machines.....	(X)	<sup>r</sup> 42.1	(X)	( <sup>6</sup> )
35733 --	Parts and attachments for electronic computing equipment, total.....	(X)	905.8	(X)	( <sup>7</sup> )
	Produced by complete machine manufacturers:				
35733 10	As reported in the census of manufactures <sup>3</sup> .....	(X)	709.8	(X)	( <sup>7</sup> )
	As reported on Census annual Form MA-35R.....	(X)	<sup>r</sup> 670.4	(X)	( <sup>8</sup> )
35733 31	Produced by other than complete machine manufacturers.....	(X)	196.0	(X)	( <sup>9</sup> )
35730 00	Electronic computing equipment, n.s.k. (For companies with 10 or more employees. See Note.).....	(X)	17.1	(X)	( <sup>10</sup> )
3574- --	CALCULATING AND ACCOUNTING MACHINES, TOTAL.....	(X)	631.2	(X)	( <sup>11</sup> )
	Calculating and accounting machines, including cash registers, except parts and attachments:				
35741 00	As reported in the census of manufactures <sup>3</sup> .....	(X)	464.3	(X)	( <sup>7</sup> )
	As reported on Census Annual Form MA-35R.....	(X)	(NA)	(X)	( <sup>7</sup> )
35741 11	Accounting and bookkeeping machines, including billing machines with accounting registers.....	(X)		(X)	<sup>r</sup> 369.6
35741 51	Cash registers <sup>13</sup> .....				
	Adding machines:				
35741 21	10 keyboard (hand and electric).....	<sup>r</sup> 539,697	<sup>r</sup> 40.4	242,511	27.6
35741 23	Full keyboard hand.....	22,857	1.6	34,715	2.8
35741 25	Full keyboard electric.....	51,613	9.7	51,149	12.1
	Calculating machines:				
35741 31	Printing calculators.....	93,879	34.1		
35741 33	Electronic calculating machines.....				
35741 39	Other (including rotary hand and electric and key driven hand and electric calculating machines).....	77,770	46.8	119,391	53.1
35741 41	Coin and currency handling machines, including manual and coin-operated change-makers coin counting and sorting, currency counting and payroll denominating machines.....	(X)	<sup>r</sup> 33.6	17,404	5.8
35741 98	Other calculating and accounting machines, n.e.c., including rebuilt machines.....			(X)	<sup>r</sup> 40.0
35743 --	Parts and attachments for calculating and accounting machines, total.....	(X)	131.8	(X)	( <sup>7</sup> )
	Produced by complete machine manufacturers:				
35743 10	As reported in the census of manufactures <sup>3</sup> .....	(X)	122.9	(X)	( <sup>7</sup> )
	As reported on Census Annual Form MA-35R.....		<sup>12</sup> 394.8	(X)	<sup>8</sup> 314.2
35743 31	Produced by other than complete machine manufacturers.....	(X)	8.9	(X)	<sup>9</sup> 120.2
35740 00	Calculating and accounting machines, n.s.k. (For companies with 10 or more employees. See Note.).....	(X)	29.5		
35740 02	Calculating and accounting machines, n.s.k. (For companies with less than 10 employees. See Note.).....	(X)	5.6	(X)	<sup>r</sup> 109.8

See footnotes on next page.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963--Continued

FOOTNOTES FOR TABLE 3--INDUSTRY--3573

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

-Represents zero. (D) Withheld to avoid disclosing figures for individual companies. (NA) Not available. n.e.c. Not elsewhere classified. n.s.k. Not specified by kind. Revised. (X) Not applicable.

<sup>1</sup>The total value of shipments of electronic computing equipment includes extensive duplication resulting from the use of products of some establishments in the industry as materials by others within the same industry.

<sup>2</sup>The 1963 data for code 3573---, Electronic Computing Equipment, Total, includes data for code 3574---, Calculating and Accounting Machines, Total. Also, 1963 data shown for code 3573100 includes data for codes 3573310, 3574100, and 3574310.

<sup>3</sup>For these products, data were also collected on Annual Form MA-35R, Office, Computing, and Accounting Machines. In lieu of asking for detailed statistics on these products in the census of manufactures, respondents were asked to report only value of shipments for specified classes of products for which separate figures had previously been collected on the annual form. In most cases, the value figures reported in the census of manufactures for each class of products agreed closely with the corresponding figures reported in the annual survey. However, there were some differences between the census figures and the annual survey figures. These variations were due primarily to the following reasons:

- a. Use of different reporting periods (calendar year vs. fiscal year.)
- b. Use of different basis for reporting value (company sales vs. factory production.)
- c. Use of estimates in reporting data on the annual survey, whereas census of manufactures figures generally represent more exact shipments figures.

<sup>4</sup>Figures include in some cases the value of leased machines as well as the value of machines sold outright.

<sup>5</sup>The 1963 data for product code 3573141, Punched card system machine, are included with product code 3574111, Accounting and bookkeeping machines, including billing machines with accounting registers, and product code 3574151, Cash registers.

<sup>6</sup>The 1963 data for product code 3573198, Other electronic computing equipment, n.e.c., including rebuilt machines, are included with product code 3574198, Other calculating and accounting machines, n.e.c., including rebuilt machines.

<sup>7</sup>Included with product code 3573100.

<sup>8</sup>The 1963 data for product code 3573310, Parts and attachments for electronic computing equipment produced by complete machine manufacturers as reported on Census annual Form MA-35R, are included with product code 3574310, Parts and attachments for calculating and accounting machines produced by complete machine manufacturers as reported on Census annual Form MA-35R. Such 1963 data are also included with data shown for product code 3573100.

<sup>9</sup>The 1963 data for product code 3573331, Parts and attachments for electronic computing equipment produced by other than complete machine manufacturers, are included with product code 3574331, Parts and attachments for calculating and accounting machines produced by other than complete machine manufacturers.

<sup>10</sup>The 1963 data for electronic computing equipment, not specified by kind, are included with calculating and accounting machines, not specified by kind.

<sup>11</sup>Included with product code 3573---.

<sup>12</sup>The 1967 data for product code 3574111, Accounting and bookkeeping machines, including billing machines with accounting registers, and product code 3574111, Cash registers, are included with product code 3574310, Parts and attachments for calculating and accounting machines produced by complete machine manufacturers as reported on Census annual Form MA-35R.

<sup>13</sup>The number of cash registers shipped during 1967 and 1963 were 117,495 and 87,606, respectively.

## 1967 CENSUS OF MANUFACTURES

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967				1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
			INDUSTRY 3573, --ELECTRONIC COMPUTING EQUIPMENT		INDUSTRY 3574, --CALCULATING AND ACCOUNTING MACHINES		INDUSTRIES 3573 AND 3574, --COMPUTING AND RELATED MACHINES	
	Materials, parts, containers, and supplies, total.....		(X)	1,761.1	(X)	141.6	(X)	1,388.7
	Mill shapes and forms (except castings):							
	Carbon steel:							
331011	Bars and bar shapes.....	1,000 short tons.	1.8	0.8	( <sup>2</sup> )	( <sup>2</sup> )	11.0	3.2
331012	Sheet and strip.....	do.	(NA)	5.7	30.1	7.6	22.9	5.6
331015	Structural shapes.....	do.	( <sup>3</sup> )				1.4	0.4
331017	Wire and wire products.....	do.	2.9	3.4			0.2	0.3
331019	All other carbon steel mill shapes and forms..	do.	26.7	22.1	215.5	25.8	2.1	0.7
331020	Alloy steel (except stainless).....	do.					2.5	2.0
331031	Stainless steel.....	do.	2.1	3.1			0.8	1.2
	Copper and copper-base alloy:							
335728	Bare wire for electrical conduction.....	Million lbs.....	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )		
335790	Insulated wire and cable.....	Million lbs. (copper content)	(NA)	39.0	( <sup>4</sup> )	( <sup>4</sup> )	5.7	4.4
335102	Rod, bar, and mechanical wire, including extruded an/or drawn shapes.....	Million lbs.....			( <sup>4</sup> )	( <sup>4</sup> )	0.8	0.5
335123	Plate, sheet, and strip (including military cups and discs).....	do.	0.5	0.6	( <sup>4</sup> )	( <sup>4</sup> )	2.4	2.9
335127	Pipe and tube.....	do.	0.1	0.2	( <sup>4</sup> )	( <sup>4</sup> )	0.3	0.3
	Aluminum and aluminum-base alloy:							
335202	Sheet, plate and foil.....	do.					1.9	1.4
335205	Extruded shapes (including extruded rod, bar, pipe tube, etc.).....	do.					1.6	1.1
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	do.	9.0	8.5	3.6	2.0	0.7	0.4
	Castings (rough and semifinished): <sup>5</sup>							
332300	Steel.....	1,000 short tons.	(NA)	2.8	( <sup>4</sup> )	( <sup>4</sup> )	0.6	0.6
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	3.1	4.0	( <sup>4</sup> )	( <sup>4</sup> )	2.7	3.2
	Electric motors and generators: <sup>5</sup>							
	Fractional horsepower electric motors (under 1 hp.):							
362110	Timing motors, synchronous and subsynchronous.	1,000.....	(NA)	4.6	214.3	0.5	(NA)	1.6
362115	Other fractional horsepower electric motors...	do.	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	353.2	7.9
362120	Integral horsepower motors and generators (1 hp. and over).....	do.	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )	13.0	4.1
	Bearings:							
356218	Ball.....		(X)	4.2	(X)	( <sup>4</sup> )	(X)	3.1
356201	Roller.....				(X)	( <sup>4</sup> )	(X)	0.2
367010	Electron tubes, except X-ray <sup>5</sup> .....	Millions.....	0.5	1.0	( <sup>4</sup> )	( <sup>4</sup> )	1.1	2.5
367408	Solid state semiconductors <sup>5</sup> .....	do.	349.1	142.0	92.2	13.4	257.2	100.8
367901	Resistors, capacitors, transformers, sockets, and other electronic components and accessories, except solid state semiconductors.....		(X)	205.7	(X)	12.2	(X)	
357330	Parts and attachments specially designed for electronic computing equipment.....		(X)	690.1	(X)	( <sup>4</sup> )	(X)	1,215.8
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	621.2	(X)	88.2	(X)	
976000	Materials and components, n.s.k. <sup>6</sup> .....		(X)	22.1	(X)	11.9	(X)	24.3

(NA) Not available. (X) Not applicable.

<sup>1</sup>Includes extensive duplication because the products of some establishments are consumed as materials by other establishments in the same industry.<sup>2</sup>Data for material code 331011, carbon steel bars and bar shapes, has been included with material codes 331012 through 331031 for industry 3574, Calculating and Accounting Machines.<sup>3</sup>Data for material code 331015, carbon steel structural shapes, has been included with material code 331019, all other carbon steel mill shapes and forms, for industry 3573, Electronic Computing Equipment.<sup>4</sup>Included with material code 970099, All other materials and components etc., to avoid disclosing figures for individual companies.<sup>5</sup>No data are available for the quantities of castings, electric motors and generators, electron tubes or solid state semiconductors produced and consumed in the same establishment.<sup>6</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. There were no such small establishments in industry 3573. In industry 3574, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category and is shown in tables 3 and 4.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

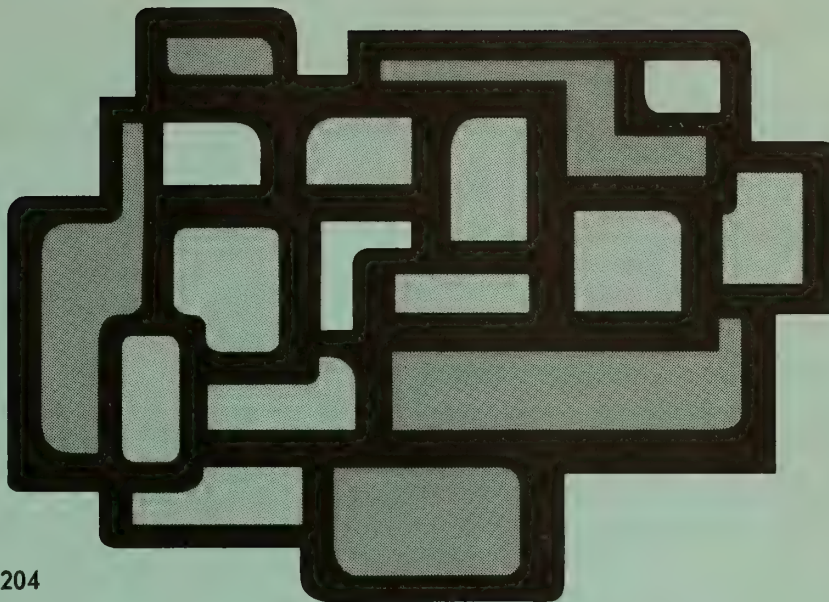
**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# 1968

## COUNTY BUSINESS PATTERNS

For a Publications Order Form to purchase separate paperbound reports for each State (prices vary) and the U.S. Summary, write to the Publications Distribution Section, Bureau of the Census, Washington, D.C. 20233. C3.204



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\_\_\_\_\_ Employment \_\_\_\_\_  
Number and Employment-Size of Reporting Units  
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### Data presented \_\_\_\_\_

The individual State reports present the principal data items by detailed industry—4-digit level of the Standard Industrial Classification (SIC)—for States and counties and by major industry group (2-digit SIC) for SMSA's. Also included, by major industry group, are data on the number of employees, by employment-size class; the number of reporting units with 500 or more employees, by employment-size class; the number of reporting units, employees, and taxable payrolls of administrative and auxiliary units.

The U.S. Summary includes data by detailed industry (4-digit SIC) for the United States and by major group (2-digit SIC) for each State. Also included are totals of the principal data items for each county and SMSA.

### Data on cards and tapes \_\_\_\_\_

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### Industries covered \_\_\_\_\_

Data are shown for the following broad industry categories:

*Agricultural services, forestry, and fisheries*  
*Mining*  
*Contract construction*  
*Manufacturing*  
*Transportation and other public utilities*  
*Wholesale trade*  
*Retail trade*  
*Finance, insurance, and real estate*  
*Services*

### How CBP data are used \_\_\_\_\_

County Business Patterns is a standard reference source of small-area data. CBP data are especially useful for:

*Analyzing market potentials*  
*Determining location and size of sales territories*  
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OFFICIAL BUSINESS



# 1967 CENSUS OF MANUFACTURES

MC67(P)-35F-4



## INDUSTRY SERIES

### Scales and balances

SIC Code 3576

**preliminary  
report**

The Scales and Balances, Except Laboratory, Industry includes establishments primarily engaged in manufacturing weighing and force measuring machines and devices of all types, except those regarded as scientific apparatus for laboratory and experimental work which are classified in industry 3811.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Scales and Balances Industry amounted to \$140.2 million, an increase of 42 percent

compared with 1963. Value added by manufacture at \$90.0 million in 1967 was 40 percent more than value added in 1963. Average employment in the industry showed an increase of 12 percent from 1963 to a total of 6.5 thousand employees in 1967.

Of the \$140.2 million total value of shipments and other receipts of establishments classified as scales and balances, \$10 million were products primary to other industries; and \$5 million were receipts for miscellaneous activities. The industry shipments of primary products represented 93 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 92 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3576--SCALES AND BALANCES														
1967 Census . . . .	76	34	6.5	45.6	4.3	8.5	24.0	90.0	51.3	140.2	5.1	36.1	93	96
1966 ASM <sup>1</sup> . . . . .	(NA)	(NA)	6.7	44.9	4.5	9.4	25.5	86.9	49.2	130.7	3.0	36.8	(NA)	(NA)
1965 ASM <sup>1</sup> . . . . .	(NA)	(NA)	6.5	40.6	4.2	8.6	23.0	73.0	44.2	114.7	2.0	28.4	(NA)	(NA)
1964 ASM <sup>1</sup> . . . . .	(NA)	(NA)	5.8	36.1	3.8	7.8	20.6	62.8	36.8	100.8	1.7	22.3	(NA)	(NA)
1963 Census . . . . .	85	35	5.8	35.1	3.7	7.7	19.9	64.4	35.3	98.5	1.1	24.0	92	97
1962 ASM <sup>1</sup> . . . . .	(NA)	(NA)	5.2	29.1	3.4	7.0	16.5	49.8	27.7	77.7	1.0	17.0	(NA)	(NA)
1961 ASM <sup>1</sup> . . . . .	(NA)	(NA)	5.2	28.9	3.5	7.3	16.7	49.7	26.4	74.8	0.8	17.3	(NA)	(NA)
1960 ASM <sup>1</sup> . . . . .	(NA)	(NA)	5.0	26.8	3.4	7.0	15.6	48.3	24.1	70.4	1.3	15.7	(NA)	(NA)
1959 ASM <sup>1</sup> . . . . .	(NA)	(NA)	5.4	27.8	3.6	7.4	16.1	50.0	29.1	80.9	*1.8	15.4	(NA)	(NA)
1958 Census <sup>2</sup> . . . .	72	32	5.3	26.6	3.5	6.9	15.0	49.1	27.8	78.3	1.4	17.2	91	97

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 5 and 6, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director



The total value of scales and balances shipped by all producers in 1967 was \$131.4 million of which \$126 million, or 96 percent, were shipped by plants classified in industry 3576, Scales and Balances, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 97 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3576--SCALES AND BALANCES												
United States, total.....	76	34	6.5	45.6	4.3	8.5	24.0	90.0	51.3	140.2	5.1	5.8	64.4
Northeast.....	25	11	2.7	15.8	1.8	3.6	9.8	34.9	19.1	53.1	(D)	(D)	(D)
North Central.....	29	16	3.3	26.5	2.2	4.3	12.2	49.5	27.9	77.3	2.7	(D)	(D)
West.....	17	6	0.3	2.8	0.2	0.5	1.7	4.8	3.7	8.4	(D)	(D)	(D)
California.....	13	6	0.3	2.6	0.2	0.4	1.6	4.7	3.6	8.1	(D)	0.3	3.7

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000)	Value (\$1,000) <i>million</i>	Quantity (1,000)	Value (\$1,000) <i>million</i>
3576----	SCALES AND BALANCES, TOTAL.....	(X)	131.4	(X)	90.0
	Scales and balances, except laboratory:				
35760 13	Motor truck scales.....	4.9	18.7	3.0	12.1
35760 15	Railroad track scales.....				
	Industrial scales:				
35760 21	Bench and portable.....	(X)	8.9	(X)	6.3
35760 23	Floor scales, including built-in and dormant.....	(X)	6.9	(X)	3.8
35760 25	Predetermined weighing and checkweighing scales all types except automatic bulk material weighers, fillers, and batching proportioners...	(X)	9.9	(X)	8.7
35760 27	Automatic bulk material weighers, predetermined weight type, for weighing, filling, batching and proportioning.....	(X)	10.6	(X)	6.0
35760 29	Miscellaneous industrial scales, including special purpose, crane, suspension, tank, hopper, force measuring devices, and conveyor scales (weigh and feed) for bulk materials.....	(X)	18.7	(X)	10.2
	Retail and commercial scales:				
35760 31	Computing.....	(NA)	19.6	(NA)	12.1
35760 35	Miscellaneous, including noncomputing counter, cotton beams and steel yards, egg-grading scales, and hanging scales for retail use.....			(X)	2.5
	Household and person weighing scales:				
35760 41	Bathroom.....	3,719.7	13.8	3,470.0	11.0
35760 45	Person-weighing scales, (coin operated and free weighing) and miscellaneous household scales, including kitchen, baby scales, etc.	(X)	1.8	(X)	2.3
35760 51	Mailing and parcel post scales.....	(NA)	3.2	326.0	2.9
35760 82	Accessories and attachments (sold separately).....	(X)	2.3	(X)	2.6
35760 84	Parts for scales and balances (sold for assembly elsewhere, repair, service, etc.).....	(X)	8.7	(X)	5.9
35760 00	Scales and balances, n.s.k. (For establishments with 10 or more employees. See Note.).....	(X)	6.9	(X)	3.4
35760 02	Scales and balances, n.s.k. (For establishments with less than 10 employees. See Note.).....	(X)	1.4		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

## 1967 CENSUS OF MANUFACTURES

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3576.--SCALES AND BALANCES					
	Materials, parts, containers, and supplies, total.....		(X)	46.9	(X)	32.0
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 Short tons.	2.0	0.5	2.1	0.5
331012	Sheet and strip.....	..do.....	17.5	3.1	22.5	3.5
331015	Structural shapes.....	..do.....	5.8	1.0	4.7	0.9
331017	Wire and wire products.....	..do.....	1.7	0.4	0.1	(Z)
331019	All other carbon steel mill shapes and forms.....	..do.....			2.1	0.5
331020	Alloy steel (except stainless).....	..do.....	0.6	0.9	0.1	0.1
331031	Stainless steel.....	..do.....			0.4	0.6
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction only).....	Million lbs.....	(Z)	(Z)	(NA)	(NA)
335790	Insulated wire and cable.....	Million lbs copper content..	(D)	(D)	(D)	(D)
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	(D)	(D)	(D)	(D)
335123	Plate, sheet, and strip (including military cups and discs)..	..do.....				
335127	Pipe and tube.....	..do.....				
	Aluminum and aluminum base alloy:					
335202	Sheet, plate, and foil.....	..do.....	(D)	(D)	0.4	0.4
335205	Extruded shapes (including extruded rod, bar, pipe tube, etc.)	..do.....				
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	..do.....				
	Castings (rough and semifinished): <sup>1</sup>					
332300	Steel.....	Short tons.....	0.3	0.2	0.2	0.2
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	(NA)	1.8	2.4	1.6
	Electric motors and generators: <sup>1</sup>					
	Fractional horsepower electric motors (under 1 hp.)					
362110	Timing motors, synchronous and subsynchronous.....	1,000.....	4.1	0.4	2.6	0.1
362115	Other fractional horsepower electric motors (excluding timing motors).....	..do.....	11.3	0.5	10.9	0.3
362120	Integral horsepower motors and generators (1 hp. and over).....	..do.....	(NA)	0.3	(NA)	0.1
	Bearings:					
356218	Ball.....		(X)	0.2	(X)	0.1
356201	Roller.....					
367010	Electron tubes, except X-ray <sup>1</sup> .....	Million.....	(D)	(D)	(D)	(D)
367408	Solid state semiconductors <sup>1</sup> .....	..do.....	(D)	(D)	(D)	(D)
367901	Resistors, capacitors, transformers, sockets, and other electronic components and accessories, except state semiconductors.....		(X)	(D)	(X)	(NA)
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	19.0	(X)	16.3
976000	Materials and components, n.s.k. <sup>2</sup> .....		(X)	18.6	(X)	7.0

(D) Combined with material code 970099, "All other materials, etc." to avoid disclosing figures of individual companies.

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable. (Z) Less than 0.1 when rounded.

<sup>1</sup>No data are available for castings, electric motors and generators, electron tubes or solid state semiconductors produced and consumed in the same establishment.<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3576, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



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**BUREAU OF THE CENSUS  
WASHINGTON, D.C. 20233**

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**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# 1967 CENSUS OF MANUFACTURES



MC67(P)-35F-5

## INDUSTRY SERIES

Office machines, n.e.c.

SIC Code 3579

**preliminary  
report**

The Office Machines, Not Elsewhere Classified, Industry includes establishments primarily engaged in manufacturing office machines and devices, not elsewhere classified. Establishments primarily engaged in manufacturing computing machines are classified in industry 3573, cash registers in industry 3574, typewriters in industry 3572, and photocopy and microfilm equipment in industry 3861.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Office Machines, N.E.C., Industry amounted to \$512.5 million, an increase of 46 percent compared with 1963. Value added by manufacture at \$340.4 million in 1967 was 51 percent more than value added in 1963. Average employment in the industry showed an increase of 20 percent from 1963 to a total of 20.5 thousand employees in 1967.

Of the \$512.5 million total value of shipments and other receipts of establishments classified as office machines, n.e.c., \$42 million were products

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)							
INDUSTRY 3579.—OFFICE MACHINES, N.E.C.														
1967 Census....	174	75	20.5	145.3	13.3	26.2	81.2	340.4	191.1	512.5	17.9	136.9	88	77
1966 ASM <sup>1</sup> .....	(NA)	(NA)	19.1	130.7	13.4	26.6	77.5	311.0	174.3	466.4	*13.6	112.8	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	18.2	116.1	12.5	24.2	67.3	247.9	150.0	399.3	10.0	90.6	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	16.8	108.0	11.6	23.4	63.4	242.1	129.0	368.1	10.1	90.8	(NA)	(NA)
1963 Census....	161	75	17.0	104.1	11.6	23.0	63.3	224.7	126.7	349.2	16.3	89.8	81	79
1962 ASM <sup>1</sup> .....	(NA)	(NA)	*19.2	*115.0	*13.2	*26.5	*67.9	*255.8	*103.1	*374.4	*7.9	*92.4	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	18.9	110.8	13.0	26.2	64.4	239.0	93.9	351.1	7.2	83.7	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	16.6	98.9	11.8	23.9	59.9	223.3	90.9	321.2	8.5	81.4	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	15.6	86.6	10.9	21.2	52.7	191.1	99.0	292.9	9.7	65.6	(NA)	(NA)
1958 Census <sup>2</sup> ...	120	72	15.6	83.0	10.6	21.2	50.1	173.4	90.6	264.5	11.8	67.2	84	84

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 2 and 4, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued December 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**

primary to other industries; and \$152 million were receipts for miscellaneous activities. The industry shipments of primary products represented 88 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 81 percent in 1963.

The total value of office machines, n.e.c., shipped by all producers in 1967 was \$408.5 million of which \$318 million, or 77 percent, were shipped by plants classified in industry

3579, Office Machines, N.E.C., while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 79 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

#### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3579, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-35R, Office, Computing, and Accounting Machines.



TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture  (million dollars)	Cost of materials  (million dollars)	Value of shipments  (million dollars)	Capital expenditures, new  (million dollars)	All employees  (1,000)	Value added by manufacture  (million dollars)
	Total	With 20 employees or more (number)	Number	Payroll (million dollars)	Number	Man-hours	Wages						
	(number)		(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
	INDUSTRY 3579.--OFFICE MACHINES, N.E.C.												
United States, total.....	174	75	20.5	145.3	13.3	26.2	81.2	340.4	191.1	512.5	17.9	17.0	224.7
New England.....	13	8	4.5	37.4	2.5	5.1	18.4	72.9	27.8	98.8	(D)	4.3	59.5
Middle Atlantic.....	55	23	4.7	27.9	3.4	6.7	17.9	57.6	26.3	79.9	(D)	3.2	29.5
New York.....	31	9	2.0	11.9	1.5	3.0	7.6	28.0	10.6	37.4	1.2	1.9	17.5
East North Central....	47	26	9.4	69.6	6.1	11.9	39.3	189.2	126.7	303.4	7.1	(D)	(D)
West North Central....	11	2	0.1	0.7	0.1	0.2	0.4	1.6	0.7	2.2	0.1	(D)	(D)
California.....	19	4	0.2	1.2	0.1	0.2	0.5	2.1	1.3	3.5	0.1	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (number of units)	Value (million dollars)	Quantity (number of units)	Value (million dollars)
3579- --	OFFICE MACHINES, N.E.C., TOTAL.....	(X)	408.5	(X)	275.8
35791 --	Addressing, dictating, duplicating, and other office and store machine, n.e.c. except parts and attachments:				
	As reported in the census of manufactures <sup>1</sup> .....	(X)	324.1	(X)	<sup>2</sup> 246.9
	As reported on Census annual Form MA-35R, total <sup>1</sup> .....	(X)	296.9	(X)	206.6
	Duplicating machines:				
	Spirit:				
35791 11	Hand.....	20.5	2.5	21.8	2.7
35791 12	Electric.....			14.1	4.0
35791 16	Offset.....	38.7	37.1	11.8	23.4
	Stencil:				
35791 13	Hand.....	30.7	6.5		
35791 14	Electric.....			36.8	5.6
35791 18	Other, including gelatin and ribbon and ink.....	(X)	( <sup>3</sup> )		
	Office machines, n.e.c.:				
35791 27	Autographic registers.....	114.7	1.7	103.9	1.8
3579a 29	Dictating, transcribing, and recording machines (all media) designed as office machines, including conference recording combination dictating and telephone recording, etc.) but excluding home-type wire and tape recorders.....	189.6	50.8	130.1	31.1
35791 31	Check handling machines.....	155.3	25.0	132.1	24.5
35791 33	Time recording and time stamp machines.....	102.2	13.4	81.0	9.1
35791 36	Mail handling machines.....	573.6	72.7		
35791 26	All other office machines, n.e.c.....	(X)	87.1	(X)	104.4
35792 --	Parts and attachments for addressing, dictating, duplicating, and other office and store machines n.e.c., total.....	(X)	65.5	(X)	<sup>2</sup> 19.8
	Produced by complete machine manufacturers:				
	As reported in the census of manufactures <sup>1</sup> .....	(X)	58.9	(X)	( <sup>2</sup> )
	As reported on Census Annual Form MA-35R, total <sup>1</sup> .....	(X)	56.2	(X)	43.8
35792 19	Parts and attachments for duplicating machines.....	(X)	15.9	(X)	11.0
35792 43	Parts and attachments for office machines, n.e.c.....	(X)	40.3	(X)	32.8
35792 41	Produced by other than complete machine manufacturers.....	(X)	6.6	(X)	19.8
35790 00	Office machines n.e.c., n.s.k. (For establishments with 10 or more employees. See Note.).....	(X)	15.9		
35790 02	Office machines n.e.c., n.s.k. (For establishments with less than 10 employees. See Note.).....	(X)	3.0	(X)	9.1

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.e.c. Not elsewhere classified. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>For these products, data were also collected on Annual Form MA-35R, "Office, Computing, and Accounting Machines." In lieu of asking for detailed statistics on these products in the census of manufactures, respondents were asked to report only value of shipments for specified classes of products for which separate figures had previously been collected on the annual form. In most cases, the value figures reported in the census of manufactures for each class of products agreed closely with the corresponding figures reported in the annual survey. However, there were some differences between the census figures and the annual survey figures. These variations were due primarily to the following reasons:

- Use of different reporting periods (calendar year vs. fiscal year.)
- Use of different bases for reporting value (company sales vs. factory production.)
- Use of estimates in reporting data on the annual survey, whereas census of manufactures figures generally represent more exact shipments figures.

<sup>2</sup>1963 data for parts and attachments produced by complete machine manufacturers were included with complete machines in 1963 Census of Manufactures.

<sup>3</sup>Data are included with product code 35791 26 "All other office machines, n.e.c."

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963		
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)	
	INDUSTRY 3579.--OFFICE MACHINES, N.E.C.						
	Materials, parts, containers, and supplies, total.....		(X)	116.8	(X)	77.8	
	Mill shapes and forms (except castings):						
	Carbon steel:						
331011	Bars and bar shapes.....	1,000 short tons..	2.6	0.8	4.4	1.4	
331012	Sheet and strip.....	..do.....	16.6	4.9	15.3	3.8	
331017	Wire and wire products.....	..do.....	8.5	3.8	5.7	2.5	
331015	Structural shapes.....	..do.....			{	3.9	1.3
331019	All other carbon steel mill shapes and forms.....	..do.....					
331020	Alloy steel (except stainless).....	..do.....	0.2	0.3	0.7	0.5	
331031	Stainless steel.....	..do.....	0.4	0.5	0.4	0.5	
	Copper and copper-base alloy:						
335728	Bare wire (for electrical conduction).....	Million lbs.....	(D)	(D)	{	0.3	
335790	Insulated wire and cable.....	Million lbs copper content....	(NA)	0.3			
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	{	(NA)	0.7	0.3	
335123	Plate, sheet, and strip (including military cups and discs)..	..do.....			0.6	0.5	
335127	Pipe and tube.....	..do.....			(Z)	(Z)	
	Aluminum and aluminum-base alloy:						
335202	Sheet, plate and foil.....	..do.....	( <sup>2</sup> )	( <sup>2</sup> )	0.9	0.6	
335205	Extruded shapes (including extruded rod, bar, pipe, tube, etc.).....	..do.....	0.3	0.2	0.8	0.6	
335209	All other aluminum mill shapes and forms.....	..do.....	<sup>2</sup> 0.9	<sup>2</sup> 1.6	0.9	0.9	
	Castings (rough and semifinished): <sup>2</sup>						
332300	Steel.....	1,000 short tons..	1.7	0.8	0.6	0.3	
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	(D)	(D)	1.6	1.5	
	Electric motors and generators: <sup>2</sup>						
	Fractional horsepower electric motors (under 1 hp.):						
362110	Timing motors, synchronous and subsynchronous.....	1,000 short tons..	313.4	2.1	50.3	0.2	
362115	Fractional horsepower electric motors.....	..do.....	203.9	2.6	150.5	1.9	
362120	Integral horsepower motors and generators (1 hp. and over)....	..do.....	-	-	(D)	(D)	
	Bearings:						
356218	Ball.....		{	(X)	(X)	0.5	
356201	Roller.....						
367010	Electron tubes except X-ray <sup>2</sup> .....	Million lbs.....	0.1	(Z)	0.1	0.1	
367408	Solid state semiconductors <sup>2</sup> .....	..do.....	1.4	0.3	1.1	0.2	
970099	All other materials and components, parts, containers, and sup- plies consumed.....		(X)	63.5	(X)	43.3	
976000	Materials and components, n.s.k. <sup>3</sup> .....		(X)	33.4	(X)	16.6	

- Represents zero. (D) Included with code 970099, "All other materials and components" in order to avoid disclosing figures for individual companies. (X) Not applicable. (Z) Less than 0.1 after rounding.

<sup>1</sup>Aluminum, sheet, plate and foil, code 335202, is included with code 335209 "All other aluminum mill shapes and forms."

<sup>2</sup>No data are available for the quantities of castings electric motors and generators, electron tubes and solid state semiconducts produced and consumed in the same establishment.

<sup>3</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



### SCOPE AND COVERAGE

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In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3579, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

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# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**U.S. DEPARTMENT OF COMMERCE  
BUREAU OF THE CENSUS  
WASHINGTON, D.C. 20233**

**POSTAGE AND FEES PAID  
U.S. DEPARTMENT OF COMMERCE**

**OFFICIAL BUSINESS**

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-35G-1

## INDUSTRY SERIES

**preliminary  
report**

### Automatic merchandising machines

SIC Code 3581

The Automatic Merchandising Machines Industry includes establishments primarily engaged in manufacturing automatic merchandising units, also referred to as vending machines (excluding music, amusement, or gaming machines), and coin-operated mechanisms for such machines.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Automatic Merchandising Machines Industry amounted to \$248.0 million, an increase of 4 percent compared with 1963. Value added by

manufacture at \$140.8 million in 1967 was 16 percent more than value added in 1963. Average employment in the industry showed a decrease of 17 percent from 1963 to a total of 10.0 thousand employees in 1967.

Of the \$248 million total value of shipments and other receipts of establishments classified as automatic merchandising machinery, \$7 million were products primary to other industries; and \$11 million were receipts for miscellaneous activities. The industry shipments of primary products represented 97 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 81 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3581.--AUTOMATIC MERCHANDISING MACHINES														
1967 Census....	150	56	10.0	59.2	7.8	14.8	39.6	140.8	122.5	248.0	5.5	81.6	97	88
1966 ASM <sup>1</sup> .....	(NA)	(NA)	11.9	73.6	8.7	17.7	45.1	150.1	134.9	279.5	4.8	65.2	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	11.6	67.1	8.5	16.7	42.7	136.5	122.3	252.1	3.7	61.8	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	11.7	66.4	8.7	17.0	42.3	136.2	123.0	256.2	3.1	56.7	(NA)	(NA)
1963 Census....	158	68	11.7	64.8	8.4	16.8	40.4	121.4	116.9	238.0	3.5	54.0	81	90
1962 ASM <sup>1</sup> .....	(NA)	(NA)	13.4	71.5	9.5	18.3	42.4	130.8	121.4	247.5	6.4	51.3	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	11.1	57.9	7.7	15.3	34.0	96.5	94.3	201.3	2.7	38.4	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	11.0	56.8	8.1	16.4	37.0	123.6	101.8	213.6	3.5	48.4	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	8.6	42.1	6.3	12.7	26.3	83.5	83.4	165.2	2.5	34.4	(NA)	(NA)
1958 Census <sup>2</sup> ...	121	53	7.9	37.0	5.6	10.8	21.9	64.7	76.6	141.6	2.8	29.8	92	92

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued December 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**

The total value of automatic merchandising machines shipped by all producers in 1967 was \$261.2 million of which \$230 million, or 88 percent, were shipped by plants classified in industry 3581, Automatic Merchandising Machines, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 90 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3581, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-35U, Vending Machines (coin-operated).

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
	INDUSTRY 3581.--AUTOMATIC MERCHANDISING MACHINES												
United States, total.....	150	56	10.0	59.2	7.8	14.8	39.6	140.8	122.5	248.0	5.5	11.7	121.4
Northeast.....	38	15	3.1	18.7	2.2	4.2	11.7	44.2	32.2	71.7	1.4	3.5	38.0
New York.....	14	6	0.6	2.8	0.5	0.9	2.1	4.6	4.6	9.2	0.1	0.7	4.9
East North Central.....	39	11	2.0	11.5	1.5	2.9	7.7	21.5	18.3	35.0	1.1	3.1	33.8
Illinois.....	21	7	1.5	8.6	1.2	2.3	6.2	16.0	12.8	23.8	1.0	1.7	14.9
West North Central.....	22	12	3.1	19.5	2.5	4.5	13.5	52.9	53.1	102.7	2.3	2.9	30.0
California.....	16	5	0.3	1.7	0.2	0.4	1.1	4.1	1.9	5.4	0.1	0.8	8.5

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000 units)	Value (million dollars)	Quantity (1,000 units)	Value (million dollars)
3581- --	AUTOMATIC MERCHANDISING MACHINES, TOTAL.....	(X)	261.2	(X)	206.6
35811 --	Automatic merchandising machines:				
	As reported in the census of manufactures, total <sup>1</sup> .....	(X)	198.4	(X)	164.3
	As reported on Census Annual Form MA-35U, total <sup>1</sup> .....	(X)	188.7	(X)	163.5
35812 --	Coin-operated mechanisms and parts for automatic merchandising machines, total.....	(X)	45.5	(X)	32.8
35812 51	Coin-operated mechanisms (for sale separately).....	(NA)	27.0	1,121.0	19.1
35812 69	Parts for automatic vending machines (except coin-operated mechanisms)...	(X)	18.5	(X)	13.6
35810 00	Automatic merchandising machines and parts, n.s.k. (For companies with 10 or more employees. See Note.).....	(X)	14.7	(X)	9.5
35810 02	Automatic merchandising machines and parts, n.s.k. (For companies with less than 10 employees. See Note.).....	(X)	2.6		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Data for "other vending machines for beverages," on the Current Industrial Reports Series, MA-35U, "Vending Machines (coin-operated)" have been revised from 4,697 units \$4,388 (000) value of shipments to 6,183 units \$5,994 (000) value of shipments. Also, data for "other vending machines for confections and foods," have been revised from 19,348 units valued at \$15,329 (000), to 19,973 units valued at \$15,986 (000).

<sup>2</sup>For these products, data were also collected on annual Form MA-35U, "Vending Machines (coin-operated)." In lieu of asking for detailed statistics on these products in the census of manufactures, respondents were asked to report only value of shipments for specified classes of products for which separate figures had previously been collected on the annual form. In most cases, the value figures reported in the census of manufactures for each class of products agreed closely with the corresponding figures reported in the annual survey. However, there were some differences between the census figures and the annual survey figures. These variations were due primarily to the following reasons:

- Use of different reporting periods (calendar year vs. fiscal year.)
- Use of different bases for reporting value (company sales vs. factory production.)
- Use of estimates in reporting data on the annual survey, whereas census of manufactures figures generally represent more exact shipments figures.



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963		
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)	
	INDUSTRY 3581.—AUTOMATIC MERCHANDISING MACHINES						
	Materials, parts, containers, and supplies, total.....		(X)	113.3	(X)	108.8	
	Mill shapes and forms (except castings):						
	Carbon steel:						
331011	Bars and bar shapes.....	1,000 short tons..	(NA)	0.2	1.4	0.3	
331012	Sheet and strip.....	..do.....	70.0	12.8	58.0	10.1	
331013	Plates.....	..do.....	}	(NA)	0.2	0.1	
331015	Structural shapes.....	..do.....			0.2	0.1	
331019	All other carbon steel mill shapes and forms.....	..do.....			0.6	0.2	
331020	Alloy steel (except stainless).....	..do.....			1.1	0.7	0.3
331031	Stainless steel mill shapes and forms.....	..do.....	0.8	0.9	2.7	3.1	
335121	Copper and copper-base alloy mill shapes and forms.....	Million lbs.....	( <sup>1</sup> )	( <sup>1</sup> )	1.6	1.0	
	Aluminum and aluminum-base alloy:						
335202	Sheet, plate, and foil.....	..do.....	}	2.7	1.7	0.7	0.4
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	..do.....				0.5	0.5
	Castings (rough and semifinished): <sup>2</sup>						
332011	Iron (gray and malleable).....	1,000 short tons..	(NA)	0.9	( <sup>1</sup> )	( <sup>1</sup> )	
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	( <sup>1</sup> )	( <sup>1</sup> )	0.7	0.4	
336200	Copper and copper-base alloy.....	..do.....	(Z)	(Z)	0.1	0.1	
	Electric motors and generators: <sup>2</sup>						
362110	Fractional horsepower electric motors (under 1 hp.) timing motors, synchronous and subsynchronous.....	1,000.....	921.6	4.7	957.5	3.4	
362115	Other fractional horsepower electric motors (excluding timing motors).....	..do.....	(NA)	1.6	174.4	1.7	
362120	Integral horsepower motors and generators (1 hp. and over).....	..do.....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	78.9	(X)	67.5	
976000	Materials, containers, supplies, n.s.k. <sup>3</sup> .....		(X)	10.6	(X)	19.7	

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable. (Z) Less than 0.1 when rounded.

<sup>1</sup>Included with material code 970099, "All other materials and components...." to avoid disclosing figures for individual companies.<sup>2</sup>No data are available on the quantities of castings or electric motors and generators produced and consumed in the same establishment.<sup>3</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

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**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

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**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

**U.S. DEPARTMENT OF COMMERCE**  
**Bureau of the Census**  
Washington, D.C. 20233

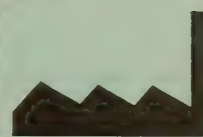
POSTAGE AND FEES PAID  
U.S. DEPARTMENT OF COMMERCE

OFFICIAL BUSINESS





# 1967 CENSUS OF MANUFACTURES



MC67(P)-35-G-2

## INDUSTRY SERIES

### Commercial laundry equipment

SIC Code 3582

**preliminary  
report**

The Commercial Laundry, Dry Cleaning, and Pressing Machine Industry includes establishments primarily engaged in manufacturing laundry and dry cleaning equipment and pressing machines for commercial and industrial use. Establishments primarily engaged in manufacturing household laundry equipment are classified in industry 3633.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Commercial Laundry Equipment Industry amounted to \$183.0 million, an increase

of 34 percent compared with 1963. Value added by manufacture at \$96.4 million in 1967 was 36 percent more than value added in 1963. Average employment in the industry showed an increase of 15 percent from 1963 to a total of 7.5 thousand employees in 1967.

Of the \$183.0 million total value of shipments and other receipts of establishments classified as commercial laundry equipment, \$18 million were products primary to other industries; and \$12 million were receipts for miscellaneous activities. The industry shipments of primary products represented 89 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 91 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio <sup>3</sup> (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3582.—COMMERCIAL LAUNDRY EQUIPMENT														
1967 Census....	117	54	7.5	50.9	5.4	11.2	32.5	96.4	85.9	183.0	4.9	41.6	89	76
1966 ASM <sup>1</sup> .....	(NA)	(NA)	7.8	51.9	5.7	12.3	32.1	102.7	90.9	190.5	4.6	44.7	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	7.6	47.1	5.4	11.3	28.4	94.0	81.2	172.3	2.4	40.0	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	6.8	39.9	4.9	10.3	25.3	78.6	69.2	147.1	1.8	33.7	(NA)	(NA)
1963 Census....	115	58	6.5	37.9	4.7	9.6	23.5	70.8	64.9	136.8	2.5	32.7	91	89
1962 ASM <sup>1</sup> .....	(NA)	(NA)	6.3	36.1	4.3	9.2	21.6	64.6	64.2	124.7	1.3	30.5	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	5.9	32.6	4.1	8.4	20.4	61.5	55.9	119.9	2.7	26.2	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	6.9	36.9	4.7	9.3	22.1	74.7	63.3	137.3	1.3	30.7	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	6.8	36.4	4.8	9.7	22.2	71.0	66.4	138.0	1.5	32.4	(NA)	(NA)
1958 Census <sup>2</sup> ...	119	47	6.6	33.0	4.5	9.2	20.2	65.6	54.1	119.5	2.0	30.5	94	95

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 2, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

<sup>3</sup>The change in coverage ratio for this industry between 1963 and 1967 results largely from separately identifying coin-operated washer extractor and drying tumblers for commercial laundry equipment. Most of these products are provided by establishments classified in other industries.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary****Rocco C. Siciliano, Under Secretary****BUREAU OF THE CENSUS George Hay Brown, Director**



## 1967 CENSUS OF MANUFACTURES

The total value of commercial laundry equipment shipped by all producers in 1967 was \$199.6 million of which \$153 million, or 76 percent, were shipped by plants classified in industry 3582, Commercial Laundry Equipment, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 89 percent in 1963. The decrease in coverage is due mainly to the reporting in 1963 of some coin operated washer - extractors and

dryers with household equipment classified in industry 3633.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967										1963		
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
	INDUSTRY 3582.--COMMERCIAL LAUNDRY EQUIPMENT												
United States, Total.....	117	54	7.5	50.9	5.4	11.2	32.5	96.4	85.9	183.0	4.9	6.5	70.8
Connecticut.....	5	2	0.1	0.7	0.1	0.1	0.4	1.3	1.1	2.3	(Z)	(D)	(D)
New York.....	16	9	1.1	7.8	0.8	1.7	5.4	14.3	13.6	29.0	0.5	1.0	12.7
North Central.....	32	18	3.1	24.3	2.2	4.8	15.4	41.6	36.6	78.7	1.8	3.3	31.9
Florida.....	5	2	0.1	0.7	0.1	0.1	0.4	1.4	1.6	2.9	(D)	(D)	(D)
West South Central....	14	6	0.5	3.3	0.3	0.8	1.9	7.0	8.1	14.8	0.3	0.4	5.4

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000 units)	Value (million dollars)	Quantity (1,000 units)	Value (million dollars)
3582- --	COMMERCIAL LAUNDRY EQUIPMENT, TOTAL.....	(X)	<sup>1</sup> 199.6	(X)	129.6
	Commercial laundry equipment and laundry presses:				
35820 21	Washers only.....	4.1	8.1	5.7	8.7
35820 22	Extractors only.....	3.7	3.9	6.6	5.6
	Washer-extractor combinations:				
35820 12	Coin-operated.....	159.0	29.0	} <sup>2</sup> 7.4	} <sup>2</sup> 14.5
35820 14	Other than coin.....	4.7	27.6		
	Drying tumblers:				
35820 16	Coin-operated.....	69.8	15.1	} <sup>3</sup> 49.8	} <sup>3</sup> 21.0
35820 18	Other than coin.....	7.2	5.2		
35820 26	Ironers, flatwork.....	(NA)	7.4	1.7	5.8
35820 27	Presses, laundry.....	14.3	21.8	15.8	18.7
35820 28	Other commercial laundry equipment.....	(X)	11.8	(X)	7.7
35820 31	Parts, attachments, and accessories <sup>4</sup> .....	(X)	13.4	(X)	14.2
	Drycleaning equipment and clothing presses:				
	Drycleaning units:				
35820 32	Coin-operated.....	3.3	4.8	5.2	10.2
35820 33	Other than coin-operated.....	3.4	7.5	1.6	4.0
35820 41	Presses, drycleaning.....	6.9	7.1	( <sup>5</sup> )	( <sup>5</sup> )
35820 43	Garment-manufacturer's (needle trades) presses.....	0.8	1.3	( <sup>5</sup> )	( <sup>5</sup> )
35820 52	Washer-extractors.....	0.7	3.9	0.5	2.5
35820 81	Other drycleaning equipment, including washers, extractors and reclaiming units.....	(X)	13.2	(X)	<sup>5</sup> 9.2
35820 91	Parts, attachments, and accessories <sup>4</sup> .....	(X)	8.8	(X)	2.7
35820 00	Commercial laundry, drycleaning, and pressing machines, n.s.k. (For companies with 10 or more employees. See Note.).....	(X)	7.5	} (X)	} 5.2
35820 02	Commercial laundry, drycleaning, and pressing machines, n.s.k. (For companies with less than 10 employees. See Note.).....	(X)	2.2		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>This product class total (35820) is not completely comparable with data for prior years because of the inclusion in 1967 of coin-operated washer-extractors and drying tumblers product codes 35820 12 and 35820 16. An indeterminate portion of these products have previously been included in product class 36331 household. Mechanical washing machines, dryers, and washer-dryer combination.

<sup>2</sup>1963 data for these machines are primarily included in industry 3633 (Household Laundry Equipment), although an indeterminate amount were reported in industry 3582 and are included in product code 35820 14.

<sup>3</sup>For 1963, an indeterminate amount of coin-operated drying tumblers were included with household dryers, industry 3633

<sup>4</sup>Excludes coin-operated mechanisms.

<sup>5</sup>For 1963, product codes 35820 41 (Presses, drycleaning) and 35820 43 (Garment-manufacturer's (needle trade) presses) were included with product code 35820 81 (Other drycleaning equipment, including washers, extractors and reclaiming units.)

## 1967 CENSUS OF MANUFACTURES

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3582.--COMMERICAL LAUNDRY EQUIPMENT					
	Materials, parts, containers, and supplies, total.....	.....	(X)	75.9	(X)	57.6
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	6.0	1.3	5.2	1.1
331012	Sheet and strip.....	..do.....	18.4	3.1	14.3	2.3
331013	Plates.....	..do.....	8.9	1.6	4.7	0.9
331015	Structural shapes.....	..do.....	(NA)	0.3	1.7	0.5
331019	All other carbon steel mill shapes and forms.....	..do.....	3.0	0.8	2.2	0.7
331020	Alloy steel (except stainless).....	..do.....	0.8	0.3	2.4	2.8
331031	Stainless steel mill shapes and forms.....	..do.....	3.1	4.1		
335121	Copper and copper-base alloy mill shapes and forms.....	Thousand pounds..	0.3	0.3	0.7	0.4
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	..do.....	(NA)	0.5	0.5	0.4
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	..do.....	(NA)	0.2	0.2	0.1
	Castings (rough and semifinished): <sup>1</sup>					
332011	Iron (gray and malleable).....	Thousand short tons.....	12.2	5.7	11.8	3.3
336100	Aluminum and aluminum-base alloy.....	Millions lbs.....	(D)	(D)	0.6	0.6
336200	Copper and copper-base alloy.....	..do.....	0.4	0.3	0.6	0.4
	Electric motors and generators: <sup>1</sup>					
362110	Fractional horsepower electric motors (under 1 hp.) timing motors, synchronous and subsynchronous.....	Thousands.....	(NA)	0.9	58.8	0.7
362115	Other fractional horsepower electric motors (excluding timing motors).....	..do.....	79.1	2.1	68.4	1.4
362120	Integral horsepower motors and generators (1hp. and over).....	..do.....	28.2	3.6	19.1	2.9
970099	All other materials and components, parts, containers, and supplies consumed.....	.....	(X)	44.7	(X)	33.4
976000	Materials, containers, supplies, n.s.k. <sup>2</sup> .....	.....	(X)	6.1	(X)	5.4

(D) Included with material code 970099, "All other materials and components, etc." to avoid disclosing figures for individual companies.

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>No data are available for castings or electric motors and generators produced and consumed at the same establishment.<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3582, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

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**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# 1967 CENSUS OF MANUFACTURES



MC67(P)-35G-3

## INDUSTRY SERIES

**preliminary  
report**

### Refrigeration machinery

SIC Code 3585

The Air Conditioning Equipment and Commercial and Industrial Refrigeration Machinery and Equipment Industry includes establishments primarily engaged in manufacturing equipment and systems utilizing the basic refrigeration cycle, including mechanical and absorption refrigerators for commercial and industrial use; refrigeration machinery; and complete air-conditioning units for domestic, commercial, and industrial use. Establishments primarily engaged in manufacturing soda fountains and beer dispensing equipment are classified in this industry, and those primarily engaged in manufacturing household refrigerators and home and farm freezers in industry 3632.

definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Refrigeration Machinery Industry amounted to \$3,207.5 million, an increase of 66 percent compared with 1963. Value added by manufacture at \$1,506.1 million in 1967 was 69 percent more than value added in 1963. Average employment in the industry showed an increase of 36 percent from 1963 to a total of 97.6 thousand employees in 1967.

The classification of establishments for which data are tabulated in this report is based upon the

Of the \$3,207.5 million total value of shipments and other receipts of establishments classified as refrigeration machinery, \$298 million were

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)
INDUSTRY 3585.--REFRIGERATION MACHINERY														
1967 Census....	681	359	97.6	660.1	71.8	145.2	438.7	1,506.1	<sup>1</sup> 1,760.9	<sup>2</sup> 3,207.5	120.2	745.0	( <sup>3</sup> )	( <sup>3</sup> )
1966 ASM <sup>1</sup> .....	(NA)	(NA)	87.7	569.3	64.7	130.6	377.5	1,235.7	<sup>1</sup> 1,541.7	<sup>2</sup> 2,712.6	91.6	625.3	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	79.8	499.1	59.5	119.5	330.5	1,055.1	<sup>1</sup> 1,302.1	<sup>2</sup> 2,314.3	54.0	518.7	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	73.3	453.2	53.4	109.4	296.0	952.6	<sup>1</sup> 1,178.0	<sup>2</sup> 2,111.3	35.8	436.5	(NA)	(NA)
1963 Census.....	698	347	72.3	432.6	50.7	101.2	268.3	892.7	<sup>1</sup> 1,059.9	<sup>2</sup> 1,928.0	33.5	417.1	( <sup>3</sup> )	( <sup>3</sup> )
1962 ASM <sup>1</sup> .....	(NA)	(NA)	62.5	367.0	44.7	90.2	225.4	676.5	<sup>1</sup> 940.3	<sup>2</sup> 1,610.5	32.4	345.3	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	62.8	349.8	44.2	86.6	212.6	608.1	<sup>1</sup> 894.9	<sup>2</sup> 1,501.9	37.9	337.8	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	65.8	361.2	46.0	91.0	217.6	674.3	<sup>1</sup> 935.4	<sup>2</sup> 1,549.4	31.8	341.6	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	69.3	377.8	47.9	95.5	224.2	733.4	<sup>1</sup> 925.6	<sup>2</sup> 1,641.5	26.1	325.6	(NA)	(NA)
1958 Census <sup>2</sup> ...	625	278	67.7	342.2	46.2	90.4	204.9	598.0	<sup>1</sup> 806.4	<sup>2</sup> 1,441.1	23.2	290.7	( <sup>3</sup> )	( <sup>3</sup> )

(NA) Not available.  
basis of a consistency review.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

<sup>3</sup>The value of shipments and cost of materials for this industry includes extensive duplication arising from shipments between establishments in the same industry classification. Accordingly, the specialization ratios and coverage ratios are not shown. For further explanation see introductory text.

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For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary  
 Rocco C. Siciliano, Under Secretary  
 Harold C. Passer, Assistant Secretary for Economic Affairs  
**BUREAU OF THE CENSUS** George Hay Brown, Director

products primary to other industries; and \$206 million were receipts for miscellaneous activities.

The total value of refrigeration machinery shipped by all producers in 1967 was \$3,477 million of which \$2,704 million were shipped by plants classified in industry 3585, Refrigeration Machinery, while the remainder was shipped by plants classified in other industries.

The total cost of materials and total value of shipments of the Refrigeration Machinery Industry include extensive duplication resulting

from the intra-industry shipments of certain products by some establishments for use as materials by others. For this reason, the "primary product specialization ratio," a measure of the extent to which plants classified in an industry "specialize" in making the products regarded as primary to the industry, has not been computed precisely. The ratio, however, is between 85 and 100. Since this duplication is also included in the value of shipments shown in table 3, the coverage ratio for this industry has not been computed.

For an explanation of the terms used in the tables, see appendix at the end of this report.

#### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3585, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-35M, Air Conditioning and Refrigeration Equipment.



TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967										1963		
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3585.--REFRIGERATION MACHINERY												
United States, total.....	681	359	97.6	660.1	71.8	145.2	438.7	1,506.1	<sup>1</sup> 1,760.9	<sup>1</sup> 3,207.5	120.2	72.3	892.7
New England.....	29	14	1.4	9.8	0.9	1.7	5.2	19.7	21.3	40.6	0.8	1.7	17.2
Middle Atlantic.....	157	79	20.9	144.6	15.1	31.0	95.4	344.5	356.4	688.1	16.0	20.5	272.6
Pennsylvania.....	56	31	7.9	51.6	5.6	11.5	32.7	104.0	96.4	192.7	4.1	8.5	102.4
East North Central....	160	97	40.8	285.9	30.8	62.0	200.2	645.1	797.6	1,408.1	57.9	24.8	282.9
Ohio.....	38	25	13.3	97.4	10.5	22.4	71.8	258.0	253.0	493.9	(D)	7.5	85.6
Indiana.....	17	12	8.1	51.4	6.3	12.0	38.4	81.3	142.9	225.1	16.7	4.0	36.5
Illinois.....	40	24	3.4	23.3	2.5	5.2	15.6	48.0	56.1	103.4	2.5	2.1	24.3
Michigan.....	42	23	10.6	75.9	8.4	16.6	55.2	185.8	281.9	450.3	16.4	6.9	84.8
Wisconsin.....	23	13	5.3	37.9	3.1	5.9	19.1	72.1	63.6	136.4	(D)	4.4	51.8
West North Central....	53	33	9.1	62.5	6.2	12.5	37.7	129.3	125.7	252.9	17.7	7.3	110.5
Minnesota.....	17	11	3.4	22.5	2.5	5.2	14.2	61.7	59.7	120.1	(D)	2.7	40.7
Missouri.....	21	14	4.1	28.6	2.7	5.6	17.8	42.8	42.9	85.3	(D)	3.5	31.2
South Atlantic.....	55	27	4.6	28.7	3.4	6.8	16.8	54.3	63.8	114.5	3.6	3.5	41.8
Maryland.....	7	5	0.5	3.9	0.4	0.7	2.0	8.1	6.9	15.7	0.2	(D)	(D)
Georgia.....	10	4	1.0	6.5	0.7	1.5	4.0	10.2	10.9	21.0	0.3	0.8	6.9
Florida.....	21	5	0.3	1.8	0.3	0.4	1.0	3.7	3.8	7.2	0.1	0.3	3.1
East South Central....	25	14	5.6	32.0	4.5	9.1	23.3	101.6	121.9	218.4	14.5	3.1	48.7
Alabama.....	5	5	1.6	8.3	1.3	2.5	5.6	20.8	26.6	45.3	0.3	(D)	(D)
West South Central....	96	52	9.6	53.7	7.1	14.2	34.1	127.7	175.6	302.3	6.3	6.1	65.7
Texas.....	72	37	8.4	47.1	6.3	12.4	30.2	115.7	155.9	270.3	5.8	4.9	55.1
West.....	106	43	5.7	42.8	3.9	7.9	26.0	83.9	98.6	182.5	3.4	5.4	53.2
California.....	81	36	4.7	35.1	3.2	6.4	20.8	68.6	81.7	151.2	(D)	3.3	30.6

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

<sup>1</sup>See footnote 3, table 1.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000 units)	Value (million dollars)	Quantity (1,000 units)	Value (million dollars)
3585- --	REFRIGERATION MACHINERY, TOTAL.....	(X)	<sup>1</sup> 3,477.0	(X)	<sup>1</sup> 2,104.6
35851 --	Heat transfer equipment, except room and unitary air-conditioners				
	As reported in the census of manufactures <sup>2</sup> .....	(X)	991.3	(X)	<sup>3</sup> 1,158.8
	As reported on Census Form MA-35M <sup>2</sup> .....	(X)	925.8	(X)	<sup>3</sup> 1,139.1
35852 --	Air-conditioners, room and unitary				
	As reported in the census of manufactures <sup>2</sup> .....	(X)	1,073.9	(X)	( <sup>3</sup> )
	As reported on Census Form MA-35M <sup>2</sup> .....	(X)	1,050.0	(X)	( <sup>3</sup> )
35853 --	Commerical refrigerators and related equipment, total.....	(X)	341.1	(X)	253.7
	Refrigerated enclosures, including self-contained units, remote units with or without condensing units, and cabinets. Cabinets shipped to other manufactures of commerical refrigeration equipment are shown under code 3585798:				
35853 12	Sectional coolers or cooling rooms of the prefabricated (factory produced) type, including walk-in, roll-in, and combination cooler display types.....	56.8	76.3	36.4	33.7
	Reach-in refrigerators and reach-in type vertical display cabinets, with solid or glazed doors:				
35853 15	Normal temperature application; i.e., not intended for frozen foods, ice cream, etc.....	35.5	25.2	37.0	24.8
35853 18	Low temperature application.....	22.7	19.2		
	Display cases for meat, dairy products, produce, and other perishables, operated at normal temperatures; i.e., not intended for frozen foods, ice cream, etc.:				
35853 22	Closed.....	20.7	13.2	16.2	8.7
	Open, self-service:				
35853 24	Single-duty.....	18.8	14.4	27.6	17.6
35853 26	Double-duty.....	9.3	7.5	6.5	4.9
35853 28	Multiple deck.....	23.0	19.5	18.0	15.3
	Display cases and cabinets for frozen foods, ice cream and other foods operated at low temperatures (except coin-operated):				
	Frozen food display cases, open, self service:				
35853 31	One level.....	42.2	28.7	49.7	29.6
35853 33	Multilevel.....	9.7	10.3		
35853 35	Frozen food cabinets, low temperature reach-ins, etc., closed types...	1.5	1.3	16.6	8.2
35853 36	Ice cream counter freezers (include frozen custard machines).....	4.0	6.8	3.8	4.3
35853 38	Ice cream dispensing and hardening cabinets.....	19.2	5.8	23.2	7.2
	Mechanical drinking water coolers:				
35853 43	As reported in the census of manufactures <sup>2</sup> .....	(X)	38.4	(X)	28.6
	As reported on Census Form MA-35M <sup>2</sup> .....	267.9	37.5	195.6	26.5
	Mechanical beverage-cooling and dispensing equipment (except coin-operated):				
35853 52	Bottled beverage coolers, dry and wet types.....	38.7	9.3	38.6	11.4
35853 57	Bulk beverage dispensers (include malt dispensers and pre-cooler cabinets).....	12.1	3.6	41.9	11.7
35853 73	Farm and dairy milk coolers (including immersion type and bulk tank storage coolers).....	9.2	16.3	12.2	13.3
35853 98	Other commerical refrigerators (include florists' refrigerators, dough retarders, egg refrigerators, environmental control equipment, laboratory and industrial refrigerators, mortuary refrigerators, etc.).....	(X)	27.3	(X)	27.0
35853 00	Unitary commerical refrigeration equipment, n.s.k.....	(X)	18.0	(X)	7.4
35854 --	Compressors and compressor units, all refrigerants				
	As reported in the census of manufactures <sup>2</sup> .....	(X)	494.4	(X)	269.4
	As reported on Census Form MA-35M <sup>2</sup> .....	(X)	442.0	(X)	<sup>4</sup> 258.6
35855 --	Condensing units, all refrigerants				
	As reported in the census of manufactures <sup>2</sup> .....	(X)	72.8	(X)	73.5
	As reported on Census Form MA-35M <sup>2</sup> .....	(X)	65.8	(X)	<sup>5</sup> 71.9
35857 --	Other refrigeration and air-conditioning equipment, including soda fountain and beer dispensing equipment, total.....	(X)	340.9	(X)	302.5

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000 units)	Value (million dollars)	Quantity (1,000 units)	Value (million dollars)
3585- --	REFRIGERATION MACHINERY--continued.				
35857 11	Soda fountain equipment (cooler box, fountainette, and similar equipment).....	(X)	26.5	(X)	26.4
35857 51	Beer dispensing equipment.....	(X)	8.9	(X)	3.8
35857 94	Evaporative air coolers.....	(NA)	38.0	429.2	28.9
35857 96	Other refrigeration machinery and air-conditioning equipment.....	(X)	89.5	(X)	77.4
35857 97	Complete refrigeration systems shipped to other manufacturers for incorporation into a cabinet, vending machine, or household refrigerator.				
35857 98	Other components and accessories for air-conditioning and refrigeration equipment.....	(X)	227.0	(X)	150.7
35857 00	Other refrigeration and air-conditioning equipment, n.s.k.....	(X)	13.1	(X)	15.4
35850 00	Refrigeration and air-conditioning equipment, n.s.k. (For companies with 10 or more employees. See Note.).....	(X)	89.0		
35850 02	Refrigeration and air-conditioning equipment, n.s.k. (For companies with less than 10 employees. See Note.).....	(X)	11.5	(X)	46.7

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not Available. (X) Not Applicable.

<sup>1</sup>The total value of shipments of refrigeration machinery includes extensive duplication resulting from the use of products of some establishments in the industry as material by others within the same industry.

<sup>2</sup>For these products, data were also collected in the census annual commodity survey program. In lieu of asking for detailed statistics on these products in the census of manufactures, respondents were asked to report only value of shipments for specified products or classes of products for which separate figures had previously been collected on the annual form. In most cases, the value figures reported in the census of manufactures for each product or class of products agreed closely with the corresponding figures reported in the annual survey. However, there were some differences between the census figures and the annual survey figures. These variations were due primarily to the following reasons:

- Use of different reporting periods (calendar year vs. fiscal year).
- Use of different bases for reporting value (company sales vs. factory production).
- Use of estimates in reporting data on the annual survey whereas census of manufactures figures generally represent more exact shipments figures.

See Current Industrial Report Series MA-35M "Air-Conditioning and Refrigeration Equipment" for more detailed product data.

<sup>3</sup>1963 data for product class 35852 are included with product class 35851.

<sup>4</sup>Includes compressors and motor compressors for household refrigerators valued at \$20.0 million.

<sup>5</sup>Includes condensing units for household refrigerators valued at \$5.6 million.



## 1967 CENSUS OF MANUFACTURES

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3585.--REFRIGERATION MACHINERY					
	Materials, parts, containers, and supplies, total.....		(x)	<sup>1</sup> 1,604.8	(x)	<sup>1</sup> 958.0
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	Short tons.....	80.3	18.4	27.1	5.1
331012	Sheet and strip.....	..do.....	491.4	86.0	347.6	61.0
331013	Plates.....	..do.....	39.9	6.4	44.3	7.0
331015	Structural shapes.....	..do.....	26.8	4.9	8.4	1.6
331017	Wire and wire products.....	..do.....	7.5	1.9	2.4	1.0
331019	All other carbon steel mill shapes and forms.....	..do.....	26.0	7.0	14.1	3.5
331020	Alloy steel except stainless.....	..do.....	8.3	1.8	6.2	2.1
331031	Stainless steel.....	..do.....	13.4	16.2	1.4	16.1
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction).....	1,000 lbs.....	5.9	4.5	1.4	1.1
335790	Insulated wire and cable.....	1,000 lbs. (copper content).	3.9	3.1		
335102	Rod, bar, and mechanical wire including extruded and/or drawn shapes.....	1,000 lbs.....	39.2	21.3	2.4	1.3
335123	Plate, sheet, and strip (including military cups and discs)...	..do.....			1.1	6.3
335127	Pipe and tube.....	..do.....			80.5	49.5
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	..do.....	126.7	47.5	65.5	24.8
335205	Extruded shapes (including extruded rod, bar, pipe, tube, etc.).....	..do.....	10.0	6.7	3.9	2.2
335209	All other aluminum mill shapes and forms, (wire, rolled rod and bar powder welded tubing, etc.).....	..do.....	14.6	7.2	2.5	1.0
	Castings (rough and semifinished): <sup>2</sup>					
332011	Iron (gray and malleable).....	Short tons.....	133.3	50.3	91.9	31.1
332300	Steel.....	..do.....	11.9	6.7	17.1	7.7
336100	Aluminum and aluminum-base alloy.....	1,000 lbs.....	24.8	12.0	8.5	5.2
336200	Copper and copper-base alloy.....	..do.....	2.1	1.7	6.8	3.9
339100	Iron and steel forgings <sup>2</sup> .....	Short tons.....	13.5	5.6	5.5	2.9
	Electric motors and generators: <sup>2</sup>					
	Fractional horsepower electric motors (under 1 hp.):					
362110	Timing motors, synchronous and subsynchronous.....	Number.....	(NA)	30.9	(NA)	5.3
362115	Fractional horsepower electric motors (including timing motors).....	..do.....	9,895.1	104.7	8,435.1	61.9
362120	Integral horsepower motors and generators (1 hp. and over)....	..do.....	4,239.8	107.9	3,366.8	68.7
	Bearings:					
356218	Ball.....		(x)	5.6	(x)	2.7
356201	Roller.....		(x)	0.2	(x)	0.4
260091	Paper and paperboard containers.....		(x)	17.9	(x)	7.9
970099	All other materials and components, parts, containers, and supplies consumed.....		(x)	750.0	(x)	504.1
976000	Materials, containers, supplies, n.s.k. <sup>3</sup> .....		(x)	174.3	(x)	72.8

(NA) Not available. (X) Not applicable.

<sup>1</sup>Includes extensive duplication because the products of some establishments all consumed as materials by other establishments in the same industry.<sup>2</sup>Excludes castings, iron and steel forgings, and electric motors and generators produced and consumed in finished products in the same plant.<sup>3</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

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# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

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**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

**Textile mill products • Apparel and leather • Chemicals, rubber, and plastics • Machinery and equipment • Primary metals • Intermediate metal products • Processed foods • Lumber, furniture, and paper products • Stone, clay, and glass products.**

A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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**U. S. DEPARTMENT OF COMMERCE  
Bureau of the Census**



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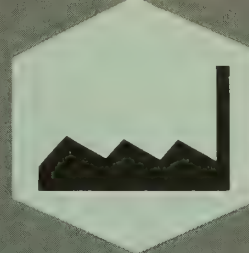
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OFFICIAL BUSINESS



# 1967 CENSUS OF MANUFACTURES



MC67(P)-35G-4

## INDUSTRY SERIES

**preliminary  
report**

### Measuring and dispensing pumps

SIC Code 3586

The Measuring and Dispensing Pumps Industry includes establishments primarily engaged in manufacturing measuring and dispensing pumps commonly used in service and filling stations for dispensing gasoline, oil, and grease, including grease guns. Establishments primarily engaged in manufacturing pumps, compressors, and pumping equipment for general industrial use are classified in industry 3561.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Measuring and Dispensing Pumps

Industry amounted to \$174.3 million, an increase of 9 percent compared with 1963. Value added by manufacture at \$96.6 million in 1967 was 5 percent more than value added in 1963. Average employment in the industry showed a decrease of 6 percent from 1963 to a total of 6.4 thousand employees in 1967.

Of the \$174.3 million total value of shipments and other receipts of establishments classified as measuring and dispensing pumps, \$41.2 million were products primary to other industries; and \$20.3 million were receipts for miscellaneous activities. The industry shipments of primary products represented 73 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was also 73 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3586.--MEASURING AND DISPENSING PUMPS														
1967 Census.....	48	23	6.4	45.5	4.3	8.9	25.0	96.6	80.6	174.3	3.8	43.6	73	81
1966 ASM <sup>1</sup> .....	(NA)	(NA)	8.1	57.6	5.4	11.2	31.6	121.8	96.0	206.9	11.0	49.6	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	8.1	55.9	5.2	10.7	29.0	113.2	90.4	199.7	6.0	47.8	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	7.3	46.6	4.9	9.7	26.0	102.8	79.0	177.9	2.7	42.2	(NA)	(NA)
1963 Census.....	43	27	6.8	41.7	4.5	8.9	23.2	91.7	71.2	159.5	2.6	37.2	73	85
1962 ASM <sup>1</sup> .....	(NA)	(NA)	6.3	38.3	4.0	7.8	19.9	81.7	66.7	143.7	2.7	33.9	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	5.6	33.6	3.6	6.9	17.2	72.0	54.6	125.9	2.4	28.6	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	6.0	34.9	3.9	7.7	18.6	71.6	54.9	124.3	3.0	30.1	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	6.6	38.4	4.3	8.5	20.4	79.2	66.0	141.2	1.6	34.2	(NA)	(NA)
1958 Census <sup>2</sup> .....	32	20	6.2	32.9	3.7	7.1	16.7	64.7	53.8	119.0	2.2	28.5	75	89

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary  
 Rocco C. Siciliano, Under Secretary  
 BUREAU OF THE CENSUS George Hay Brown, Director

The total value of measuring and dispensing pumps shipped by all producers in 1967 was \$138.8 million of which \$112.8 million, or 81 percent, were shipped by plants classified in industry 3586, Measuring and Dispensing Pumps, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 85 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
	INDUSTRY 3586.--MEASURING AND DISPENSING PUMPS												
United States, total.....	48	23	6.4	45.5	4.3	8.9	25.0	96.6	80.6	174.3	3.8	6.8	91.7
North Central.....	21	13	3.8	27.9	2.7	5.4	15.4	59.7	44.9	103.2	2.3	3.7	56.2

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity	Value (\$1,000)	Quantity	Value (\$1,000)
3586- --	MEASURING AND DISPENSING PUMPS, TOTAL.....	(X)	138.8	(X)	121.0
	Gasoline dispensing pumps, computing type (filling station type):				
35860 11	Single units.....	120.0	56.6	85.8	42.2
35860 12	Dual units <sup>1</sup> .....	14.0	11.0	11.9	9.7
35860 21	Lubricating-oil outfits, including pump and tank.....	(NA)	11.6	38.1	8.3
35860 31	Lubricating-oil pumps, including barrel pumps.....	410.0	10.1	387.9	8.8
35860 41	Grease pumps.....	(NA)	15.2	(NA)	8.8
35860 51	Grease guns.....	1,937.0	8.6	3,181.0	12.8
35860 98	Other measuring and dispensing pumps (includes noncomputing gasoline dispensing pumps).....	(X)	21.0	(X)	29.3
35860 00	Measuring and dispensing pumps, n.s.k. (For establishments with 10 or more employees. See Note.).....	(X)	4.1	}	1.0
35860 02	Measuring and dispensing pumps, n.s.k. (For establishments with less than 10 employees. See Note.).....	(X)	0.6		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Twin pumps are counted as one unit.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3586.--MEASURING AND DISPENSING PUMPS					
	Materials, parts, containers, and supplies, total.....		(X)	69.4	(X)	59.8
	Mill shapes and forms (except castings):					
	Carbon steel:					
331012	Sheet and strip.....	1,000 short tons..	21.7	3.6	13.5	2.2
331011	Bars and bar shapes.....	..do.....	18.8	5.0	8.2	2.2
331013	Plates.....	..do.....			1.1	0.1
331015	Structural shapes.....	..do.....			1.4	0.2
331019	All other carbon steel mill shapes and forms.....	..do.....			1.6	0.5
	Alloy steel (except stainless):					
331021	Bar and bar shapes.....	..do.....	1.4	1.7	0.1	(Z)
331029	All other alloy steel.....	..do.....			(Z)	(Z)
331031	Stainless steel.....	..do.....			0.7	1.1
	Copper and copper-base alloy:					
335790	Insulated wire and cable.....	Million lbs. copper content...	(D)	(D)	0.1	0.1
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	1.8	1.1	1.0	0.5
335123	Plate, sheet, and strip (including military cups and discs)...	..do.....			0.2	0.2
335127	Pipe and tube.....	..do.....			0.3	0.1
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	..do.....	(Z)	(Z)	0.2	0.2
335205	Extruded shapes (including extruded rod, bar, pipe, tube, etc.).....	..do.....	(NA)	0.4	0.4	0.4
335209	All other aluminum mill shapes and forms (wire, rolled rod... and bar, powder, welded tubing, etc.).....	..do.....			0.1	(Z)
999811	Iron and steel scrap (excluding home scrap).....	1,000 short tons..	(Z)	(Z)	(D)	(D)
	Castings (rough and semifinished): <sup>1</sup>					
332011	Iron (gray and malleable).....	..do.....	12.1	3.7	8.8	2.9
332300	Steel.....	..do.....	(D)	(D)	(D)	(D)
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	(NA)	1.3	2.7	2.0
336200	Copper and copper-base alloy.....	..do.....	(D)	(D)	0.5	0.5
339100	Iron and steel forgings <sup>1</sup> .....	.....	(D)	(D)	(D)	(D)
351901	Gasoline and other carburetor engines <sup>1</sup> .....	1,000.....	(D)	(D)	1.0	0.2
	Electric motors and generators: <sup>1</sup>					
362115	Fractional horsepower electric motor (under 1 hp.) (excluding timing motors).....	..do.....	149.2	3.6	121.1	3.1
362120	Integral horsepower motors and generators (1 hp. and over).....	..do.....	(D)	(D)	2.6	0.2
	Bearings:					
356218	Ball.....	.....	(X)	(D)	(X)	0.2
356201	Roller.....	.....			(X)	0.1
970099	All other materials and components, parts, containers, and supplies consumed.....	.....	(X)	41.8	(X)	40.2
972000	Materials, containers, supplies, n.s.k. <sup>2</sup> .....	.....	(X)	7.2	(X)	2.5

(D) Included with material code 970099 "All other materials, etc.," to avoid disclosing figures of individual companies. (NA) Not available.

n.s.k. Not specified by kind. (X) Not applicable. (Z) Less than 0.1 when rounded.

<sup>1</sup>Excludes materials produced and consumed into products at the same establishment.<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

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**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

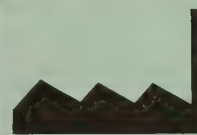
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-35G-5

## INDUSTRY SERIES

**preliminary  
report**

### Service industry machines, n.e.c.

SIC Code 3589

The Service Industry Machines, Not Elsewhere Classified, Industry includes establishments primarily engaged in manufacturing machines and equipment, not elsewhere classified, for use in service industries, such as floor sanding machines, industrial vacuum cleaners, scrubbing machines, commercial cooking and food warming equipment, and commercial dishwashing machines. Establishments primarily engaged in manufacturing household electrical appliances are classified in Group 363.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Service Industry Machines, N.E.C., Industry amounted to \$577.8 million, an increase of 53 percent compared with 1963. Value added by manufacture at \$301.8 million in 1967 was 57 percent more than value added in 1963. Average employment in the industry showed an increase of 31 percent from 1963 to a total of 20.1 thousand employees in 1967.

Of the \$577.8 million total value of shipments and other receipts of establishments classified as service industry machines, n.e.c., \$54 million were products primary to other industries; and \$51 million were receipts for miscellaneous

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Special-ization ratio (per-cent)	Coverage ratio (per-cent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3589.--SERVICE INDUSTRY MACHINES, N.E.C.														
1967 Census....	574	186	20.1	143.9	13.1	26.2	78.7	301.8	282.0	577.8	10.6	112.2	90	88
1966 ASM <sup>1</sup> .....	(NA)	(NA)	20.2	145.5	12.6	27.3	77.3	302.1	284.2	570.8	8.6	106.2	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	17.1	119.2	10.9	23.2	63.3	246.2	233.8	473.3	7.8	82.6	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	14.6	96.9	9.1	18.9	50.2	197.7	183.6	380.9	*5.2	67.9	(NA)	(NA)
1963 Census....	506	142	15.3	96.8	9.5	19.4	51.3	192.4	185.1	378.3	5.3	68.7	86	84
1962 ASM <sup>1</sup> .....	(NA)	(NA)	15.3	96.6	10.2	22.5	56.1	205.0	176.6	373.7	*6.2	58.8	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	13.5	82.0	8.8	19.7	46.4	181.5	149.2	332.1	3.2	50.3	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	12.9	75.8	8.6	18.1	45.0	153.9	143.6	300.8	3.7	48.0	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	11.8	66.8	8.5	16.4	39.1	138.2	128.4	260.8	*5.8	51.2	(NA)	(NA)
1958 Census <sup>2</sup> ....	359	125	11.7	63.7	7.7	15.1	35.9	125.2	122.0	245.2	3.2	47.3	85	81

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available. n.e.c. Not elsewhere classified.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 2 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued December 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**

activities. The industry shipments of primary products represented 90 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 86 percent in 1963.

The total value of service industry machines shipped by all producers in 1967 was \$533.5 million of which \$472 million, or 88 percent, were shipped by plants classified in industry 3589, Service Industry Machines, N.E.C., while the

remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 84 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture  (million dollars)	Cost of materials  (million dollars)	Value of shipments  (million dollars)	Capital expenditures, new  (million dollars)	All employees  (1,000)	Value added by manufacture  (million dollars)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
	INDUSTRY 3589. SERVICE INDUSTRY MACHINES, N.E.C.												
United States, total.....	574	186	20.1	143.9	13.1	26.2	78.7	301.8	282.0	577.8	10.6	15.3	192.4
New England.....	28	12	1.5	10.9	1.0	1.9	5.4	25.0	16.4	39.6	(D)	1.3	17.0
Massachusetts.....	16	8	1.2	8.5	0.7	1.4	4.0	18.2	13.0	29.4	0.4	0.9	11.2
Middle Atlantic.....	109	40	3.0	20.2	2.0	3.9	11.7	39.6	40.6	79.8	1.6	3.2	37.4
New York.....	51	12	0.9	5.7	0.6	1.1	3.0	12.2	10.3	21.7	0.3	0.8	10.7
New Jersey.....	29	13	0.8	5.3	0.5	1.1	3.2	9.0	8.5	17.4	0.3	1.4	15.3
Pennsylvania.....	29	15	1.4	9.1	0.9	1.7	5.5	18.4	21.9	40.7	0.9	0.9	11.4
East North Central.....	187	63	8.2	62.0	5.1	10.1	32.4	137.2	128.2	261.2	3.6	6.4	83.8
Ohio.....	51	16	2.0	13.5	1.3	2.5	7.9	37.0	28.1	64.5	0.5	1.5	23.3
Illinois.....	73	33	4.0	31.9	2.3	4.7	15.2	63.4	65.9	126.7	2.0	3.8	46.7
West North Central.....	52	19	2.5	17.8	1.5	3.0	8.6	34.3	30.3	64.4	1.2	1.9	24.3
Minnesota.....	19	8	1.6	12.7	0.9	1.8	5.2	25.4	22.3	47.3	0.8	0.9	11.6
Iowa.....	9	4	0.1	1.0	0.1	0.2	0.5	1.9	1.9	3.8	(D)	(D)	(D)
Missouri.....	12	6	0.6	3.8	0.5	1.0	2.7	6.4	5.4	12.1	0.1	0.7	7.0
South.....	96	23	2.4	14.3	1.6	3.2	8.4	31.4	34.4	66.0	1.5	1.0	10.8
South Atlantic.....	37	10	1.1	6.8	0.8	1.6	4.1	15.8	16.1	31.8	0.8	(D)	(D)
Florida.....	16	4	0.3	1.7	0.2	0.4	1.0	4.3	3.2	7.4	(D)	0.1	0.9
Texas.....	27	5	0.6	3.5	0.3	0.7	1.6	7.1	7.1	14.1	(D)	(D)	(D)
West.....	102	29	2.6	18.8	1.8	4.0	12.2	34.3	32.2	66.9	(D)	1.5	19.1
California.....	71	21	2.1	14.9	1.4	3.2	9.6	26.4	23.2	50.2	0.9	1.3	17.4

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000 units)	Value (million dollars)	Quantity (1,000 units)	Value (million dollars)
3589- --	SERVICE INDUSTRY MACHINES, N.E.C., TOTAL.....	(X)	533.5	(X)	341.5
35891 --	Commercial cooking and food warming equipment.....	(X)	156.2	(X)	107.0
	Nonelectric:				
35891 11	Commercial cooking stoves, ranges, ovens, and broilers (except electric).....	94.4	29.9	61.4	21.5
35891 29	Other commercial cooking equipment (except electric), including grid- dles, toasters, deep-fat fryers, coffee urns, pressure cookers--stem, etc.....	(NA)	20.2	(NA)	15.7
35891 31	Commercial food-warming equipment (except electric), including steam tables.....	(X)	3.3	(X)	5.2
	Electric:				
35891 61	Commercial ranges, ovens, and broilers, electric.....	(NA)	19.1	30.6	8.3
35891 63	Commercial electronic stoves and ovens.....			(X)	4.2
35891 71	Other commercial cooking equipment (electric), including griddles, toasters, deep-fat fryers, coffee makers, coffee urns.....	(X)	33.7	(X)	16.7
35891 81	Commercial food warming equipment (electric), including hot food server units and steam tables.....	(X)	26.9	(X)	10.5
35891 85	Parts and accessories for commercial cooking and food warming equipment.	(X)	8.3	(X)	19.0
35891 00	Commercial cooking and food warming equipment, n.s.k.....	(X)	14.8	(X)	5.8
35892 --	Service industry machines and parts, total.....	(X)	303.2	(X)	196.7
	Water softeners:				
35892 22	Industrial.....	(NA)	22.3	5.3	11.3
	Farm, household, and commercial:				
35892 25	Manual and semiautomatic.....	71.7	6.6	78.7	4.8
35892 28	Automatic.....	259.0	36.0	157.8	21.4
35892 35	Floor waxing and polishing machines, commercial and industrial type.....	79.6	17.8	95.5	13.6
35892 42	Floor sanding and floor scrubbing machines, commercial type.....	(X)	4.7	(X)	7.6
35892 61	Carpet sweepers, commercial type.....	( <sup>1</sup> )	( <sup>1</sup> )	1,084.5	5.0
35892 71	Dishwashing machines, commercial type.....	16.7	36.0	18.7	27.9
35892 81	Sewage purification equipment.....	(X)	48.2		
35892 91	Other industrial and commercial service machines.....	(X)	103.7	(X)	68.0
35892 93	Parts and accessories for service industry machines.....	(X)	18.8	(X)	24.0
35892 00	Service industry machines and parts, n.s.k.....	(X)	9.1	(X)	13.1
35893 --	Commercial and industrial vacuum cleaners, including parts and attachments	(X)	24.7	(X)	19.0
35893 11	Portable, including attachments and parts.....	141.0	16.8	193.2	14.8
35893 98	Central systems, including parts and attachments for all types of commercial and industrial vacuum cleaners.....	(X)	7.0	(X)	3.9
35893 00	Commercial and industrial vacuum cleaners, including parts and attachments, n.s.k.....	(X)	0.9	(X)	0.4
35890 00	Service industry machines, n.e.c., n.s.k. (For companies with ten or more employees. See Note).....	(X)	34.7	(X)	18.9
35890 02	Service industry machines, n.e.c., n.s.k. (For companies with less than ten employees. See Note).....	(X)	14.7		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

(NA) Not available. n.e.c. Not elsewhere classified. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>1967 data for product code 3589261 "Carpet Sweepers, commercial type" are included with product code 3589291 "Other Industrial and Commercial Service Machines" to avoid disclosing figures for individual companies.



## 1967 CENSUS OF MANUFACTURES

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3589.—SERVICE INDUSTRY MACHINES, N.E.C.					
	Materials, parts, containers and supplies, total.....		(X)	230.3	(X)	150.8
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	9.9	2.7	4.1	1.3
331012	Sheet and strip.....	..do.....	35.9	7.3	27.4	4.3
331013	Plates.....	..do.....	31.1	7.1	2.4	0.6
331015	Structural shapes.....	..do.....	18.6	4.6	1.5	0.3
331019	All other carbon steel mill shapes and forms.....	..do.....			3.0	0.6
331020	Alloy steel (except stainless).....	..do.....	14.2	14.4	1.9	1.4
331031	Stainless steel mill shapes and forms.....	..do.....			8.8	9.9
335121	Copper and copper-base alloy mill shapes and forms.....	Million lbs.....	4.0	3.0	1.6	1.1
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate and foil.....	..do.....	(NA)	2.7	1.0	0.6
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, extruded shapes, etc.)....	..do.....	(NA)	1.1	0.4	0.4
	Castings (rough and semifinished): <sup>1</sup>					
332011	Iron (gray and malleable).....	1,000 short tons.	10.1	5.3	10.1	4.3
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	6.4	4.7	5.7	4.2
336200	Copper and copper-base alloy.....	..do.....	1.9	1.7	1.3	1.0
	Electric motors and generators: <sup>1</sup>					
362110	Fractional horsepower electric motors (under 1 hp.) timing motors, synchronous and subsynchronous.....	1,000 short tons.	103.9	2.6	68.2	1.1
362115	Other fractional horsepower electric motors (excluding timing motors).....	..do.....	336.2	5.0	244.3	3.4
362120	Integral horsepower motors and generators (1 hp. and over)....	..do.....	47.8	4.1	35.1	2.3
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	124.4	(X)	87.0
976000	Materials, containers, and supplies, n.s.k. <sup>2</sup> .....		(X)	39.6	(X)	27.0

(NA) Not available. n.e.c. Not elsewhere classified. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>No data are available for the quantities of castings and electric motors and generators produced and consumed in the same establishment except the following for 1963: iron castings (code 332011), 1.0 thousand short tons; and other fractional horsepower electric motors (code 362115), 8.7 thousand units.<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3589, these small establishments accounted for approximately 2 percent of payrolls and 3 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

**U.S. DEPARTMENT OF COMMERCE**  
**Bureau of the Census**  
Washington, D.C. 20233

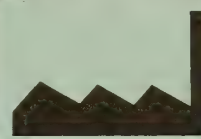
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OFFICIAL BUSINESS





# 1967 CENSUS OF MANUFACTURES



MC67(P)-35G-6

## INDUSTRY SERIES

**preliminary  
report**

### Miscellaneous machinery, except electrical

SIC Code 3599

The Miscellaneous Machinery, Except Electrical, Industry includes establishments primarily engaged in manufacturing machinery and parts except electrical, not elsewhere classified, such as pistons and piston rings, carburetors, metallic packing, and amusement park equipment. This industry also includes establishments primarily engaged in producing or repairing machine and equipment parts, not elsewhere classified, on a job or order basis for others.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classi-

fied in the Miscellaneous Machinery, Except Electrical, Industry amounted to \$3,701.4 million, an increase of 81 percent compared with 1963. Value added by manufacture at \$2,525.5 million in 1967 was 84 percent more than value added in 1963. Average employment in the industry showed an increase of 48 percent from 1963 to a total of 202.2 thousand employees in 1967.

Of the \$3,701.4 million total value of shipments and other receipts of establishments classified as miscellaneous machinery, except electrical, \$178 million were products primary to other industries; and \$388 million were receipts for miscellaneous activities. The industry shipments of primary products represented 95 percent of the total manufactured product shipments, primary and

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3599.--MISCELLANEOUS MACHINERY, EXCEPT ELECTRICAL														
1967 Census <sup>1</sup> ...	15,048	2,238	202.2	1,439.4	168.5	346.6	1,090.4	2,525.5	1,192.5	3,701.4	178.6	370.4	95	96
1966 ASM <sup>2</sup> .....	(NA)	(NA)	163.9	1,103.7	134.6	284.6	830.9	1,927.4	962.2	2,864.8	136.7	300.1	(NA)	(NA)
1965 ASM <sup>2</sup> .....	(NA)	(NA)	145.9	918.3	118.8	248.8	689.9	1,564.2	767.9	2,329.5	90.0	253.9	(NA)	(NA)
1964 ASM <sup>2</sup> .....	(NA)	(NA)	142.4	885.5	113.9	244.9	659.1	1,529.7	751.0	2,268.8	*82.4	250.7	(NA)	(NA)
1963 Census.....	12,090	1,402	135.8	793.6	108.4	224.3	593.1	1,366.3	673.8	2,036.3	71.7	233.5	90	90
1962 ASM <sup>2</sup> .....	(NA)	(NA)	139.8	772.4	114.4	224.8	567.6	1,352.0	724.2	2,055.9	*64.7	265.6	(NA)	(NA)
1961 ASM <sup>2</sup> .....	(NA)	(NA)	129.5	698.6	104.8	208.8	509.2	1,189.4	636.6	1,830.0	61.9	238.7	(NA)	(NA)
1960 ASM <sup>2</sup> .....	(NA)	(NA)	126.5	672.7	102.4	201.1	489.6	1,150.8	614.4	1,765.1	58.3	245.2	(NA)	(NA)
1959 ASM <sup>2</sup> .....	(NA)	(NA)	130.7	676.1	106.8	207.8	498.0	1,155.6	665.1	1,812.2	58.3	252.0	(NA)	(NA)
1958 Census <sup>3</sup> ...	10,171	1,090	115.7	575.4	91.6	179.7	420.8	959.9	520.7	1,481.3	93.1	229.0	92	90

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>In 1967 a number of establishments performing "machine shop jobwork" have been classified in this industry, which had previously been classified in other industries. This change in classification results mainly from the fact that a separate product code for such work (35993 11) was introduced in the 1967 Census of Manufactures. It appears that between \$400 million and \$600 million in value of shipments is accounted for by establishments which have been classified in other industries in prior years.

<sup>2</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the result of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 2 and 1 percent, respectively.

<sup>3</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued December 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

Harold C. Passer, Assistant Secretary for Economic Affairs

BUREAU OF THE CENSUS George Hay Brown, Director



secondary. This percent, called the specialization ratio for the industry, was 90 percent in 1963.

The total value of miscellaneous machinery, except electrical, shipped by all producers in 1967 was \$3,276.3 million of which \$3,135 million, or 96 percent, were shipped by plants classified in industry 3599, Miscellaneous Machinery, while the remainder was shipped by plants classified

in other industries. This percent, called the coverage ratio, was 90 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
	INDUSTRY 3599.--MISCELLANEOUS MACHINERY, EXCEPT ELECTRICAL												
United States, total.....	15,048	2,238	202.2	1,439.4	168.5	346.6	1,090.4	2,525.5	1,192.5	3,701.4	178.6	135.8	1,366.3
New England.....	1,297	218	15.8	112.2	13.3	27.7	84.7	183.3	72.4	254.8	14.2	11.9	107.2
Maine.....	38	4	0.3	1.7	0.2	0.5	1.3	3.0	1.9	4.8	0.4	0.3	1.7
New Hampshire.....	55	8	0.5	3.5	0.5	1.0	2.9	5.5	1.8	7.4	0.4	0.5	3.9
Vermont.....	27	3	0.2	1.1	0.2	0.3	0.9	1.9	0.9	2.7	0.1	0.1	1.3
Massachusetts.....	535	96	6.2	45.4	5.2	11.0	34.1	73.6	27.3	100.2	5.2	5.3	47.1
Rhode Island.....	103	12	1.1	6.5	0.8	1.6	5.0	11.0	3.8	14.9	0.8	0.8	6.8
Connecticut.....	539	95	7.5	53.9	6.3	13.3	40.5	88.3	36.7	124.7	7.4	4.8	46.5
Middle Atlantic.....	2,673	438	37.3	264.0	31.4	65.2	201.0	463.9	215.6	678.7	35.4	23.0	217.2
New York.....	1,116	189	18.5	136.8	15.5	32.9	103.9	242.7	105.7	347.9	18.1	9.3	90.6
New Jersey.....	745	88	7.0	49.7	6.0	12.4	37.8	87.0	39.1	125.8	6.2	5.6	53.7
Pennsylvania.....	812	161	11.8	77.5	9.9	19.8	59.3	134.2	70.8	205.1	11.2	8.1	72.9
East North Central...	3,711	635	62.8	465.2	51.2	105.0	343.3	821.2	392.1	1,206.7	51.8	44.0	482.7
Illinois.....	948	152	15.2	113.0	11.7	23.8	79.0	207.1	96.6	302.4	13.5	10.9	114.9
Michigan.....	996	185	19.4	149.2	15.9	32.6	111.0	261.3	126.4	383.8	16.2	(D)	(D)
Wisconsin.....	364	65	5.3	34.4	4.3	8.5	25.1	63.2	31.5	94.1	3.7	(D)	(D)
West North Central...	949	148	18.4	125.8	15.3	31.4	96.5	209.9	115.1	320.5	17.4	12.2	117.4
Minnesota.....	283	62	4.8	35.3	4.2	9.1	27.4	58.3	26.8	85.1	6.0	3.1	29.3
Missouri.....	290	46	7.8	56.7	6.3	12.3	42.6	88.3	53.7	139.3	6.9	6.2	59.0
Nebraska.....	60	3	0.3	1.7	0.3	0.5	1.3	3.3	1.8	5.1	0.3	0.2	1.8
Kansas.....	152	23	3.7	21.8	3.1	6.5	17.5	41.5	20.8	61.4	3.4	1.7	18.6
South Atlantic.....	1,081	143	12.1	75.7	10.2	20.6	57.5	127.8	62.0	188.8	9.6	8.5	71.8
Delaware.....	22	2	0.2	1.5	0.2	0.3	1.1	2.3	1.2	3.6	(D)	0.2	1.8
Maryland.....	128	21	3.2	23.7	2.6	5.6	17.0	38.2	16.1	53.9	3.0	2.3	23.8
District of Columbia	7	3	0.1	0.6	0.1	0.1	0.4	1.2	0.3	1.5	(D)	0.1	1.2
Virginia.....	114	19	1.2	7.5	1.0	2.0	5.8	11.8	6.7	18.2	1.1	0.8	6.3
West Virginia.....	85	13	0.8	5.0	0.7	1.3	3.8	8.2	4.8	12.9	0.3	0.7	5.8
North Carolina.....	206	26	1.7	9.7	1.5	2.9	7.4	18.5	8.0	26.4	1.5	1.1	8.5
South Carolina.....	82	9	0.6	3.5	0.5	1.1	2.6	5.3	4.0	9.2	0.7	0.9	5.9
Georgia.....	167	19	1.5	7.7	1.3	2.5	6.2	12.9	7.6	20.9	0.9	0.7	5.8
Florida.....	270	31	2.7	16.5	2.4	4.7	13.1	29.5	13.2	42.3	1.9	1.6	12.6
East South Central...	431	57	8.6	50.9	7.1	14.0	37.9	95.9	51.8	148.1	4.2	4.4	41.8
Kentucky.....	99	16	2.5	13.7	2.2	4.4	11.3	28.2	18.8	47.5	1.2	1.8	18.3
Tennessee.....	141	23	4.4	27.2	3.3	6.6	18.6	48.8	22.7	71.5	2.2	1.4	11.4
Alabama.....	134	11	1.1	6.0	0.9	1.8	4.9	11.5	5.6	17.2	0.6	0.7	7.4
Mississippi.....	57	7	0.6	4.0	0.5	1.2	3.1	7.3	4.6	11.9	0.3	0.5	4.7
West South Central...	1,263	130	10.2	65.2	8.7	17.8	51.8	122.5	52.9	174.8	7.9	7.0	62.1
Arkansas.....	74	6	0.7	3.6	0.6	1.3	3.0	8.0	3.4	11.3	0.2	0.4	2.9
Louisiana.....	141	23	1.6	11.0	1.3	2.7	8.6	21.0	7.6	28.7	0.6	1.1	10.1
Oklahoma.....	176	19	1.5	8.8	1.2	2.6	7.0	16.2	5.9	22.1	1.4	1.1	9.1
Texas.....	872	82	6.4	41.8	5.6	11.3	33.3	77.2	35.9	112.6	5.7	4.4	39.9
Mountain.....	424	45	4.2	28.1	3.6	7.2	21.7	46.7	25.1	71.4	3.9	3.2	28.2
Montana.....	24	1	0.1	0.4	0.1	0.1	0.3	0.7	0.5	1.2	0.1	(D)	(D)
Idaho.....	27	2	0.1	0.7	0.1	0.2	0.5	1.2	0.7	1.9	0.1	0.1	0.9
Wyoming.....	16	-	0.1	0.4	0.1	0.1	0.3	0.7	0.3	1.0	0.1	(D)	(D)
Colorado.....	112	10	1.4	9.2	1.2	2.4	7.2	14.5	8.2	22.7	1.4	1.2	10.0
New Mexico.....	65	4	0.4	2.8	0.3	0.6	2.1	5.4	2.8	8.2	0.4	0.4	4.0
Arizona.....	124	21	1.6	10.5	1.3	2.6	8.0	17.2	6.4	23.4	1.3	(D)	(D)
Utah.....	45	7	0.6	3.9	0.5	1.0	3.0	6.4	5.9	12.2	0.6	0.4	2.9
Pacific.....	3,219	424	32.8	252.2	27.8	57.7	196.0	454.3	205.5	657.7	34.1	21.6	237.9
Washington.....	235	29	2.7	22.0	2.3	4.5	16.6	41.4	37.4	81.3	4.2	1.5	14.7
Oregon.....	162	15	1.3	9.4	1.1	2.1	7.3	15.7	7.0	22.9	1.0	1.2	13.8
California.....	2,794	378	28.5	219.4	24.3	50.9	170.9	394.5	159.7	549.3	28.9	18.8	208.3
Alaska.....	10	-	0.1	0.8	0.1	0.1	0.5	1.3	0.7	2.1	0.1	(D)	(D)
Hawaii.....	18	2	0.1	0.7	0.1	0.2	0.5	1.4	0.7	2.1	0.1	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.  
- Represents zero.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Shipments including interplant transfers							
		1967						1963	
		Total shipments and other receipts including interplant transfers		Shipments for replacement, including shipments to U.S. motor vehicle manufacturers for resale <sup>1</sup>		Shipments to U.S. motor vehicle manufacturers of their suppliers for use in original equipment <sup>1</sup>	Shipments for export, including transfers to other divisions for export <sup>1</sup>	Quantity	Value
		Quantity (million units)	Value (million dollars)	Quantity (million units)	Value (million dollars)				
3599- --	MISCELLANEOUS MACHINERY, EXCEPT ELECTRICAL, TOTAL.	(X)	<sup>2</sup> 3,276.3	(X)	(X)	(X)	(X)	(X)	<sup>2</sup> 1,685.5
35991 --	Carburetors (new) pistons and piston rings, and valves, total.....	(X)	502.8	(X)	(X)	(X)	(X)	(X)	<sup>3</sup> 386.1
	Carburetors, new all types:								
35991 11	For motor vehicles (passenger cars, trucks, and busses).....	11.9	154.5	1.8	37.9	(D)	(D)	14.3	121.4
35991 13	All other carburetors.....	3.3	22.6	(X)	(X)	(X)	(X)		
	Pistons, all types (machined), excluding rough castings:								
	Aluminum:								
35991 31	For motor vehicles (passenger car, trucks, and busses).....	22.0	51.9	9.0	21.9	28.1	1.9	28.0	60.3
35991 33	All other aluminum pistons.....	16.3	19.3	(X)	(X)	(X)	(X)		
	Other than aluminum:								
35991 35	For motor vehicles (passenger cars, trucks, and busses).....	2.0	1.5	(D)	(D)	(D)	(D)	1.9	4.0
35991 37	All other pistons, except aluminum.....	(NA)	3.7	(X)	(X)	(X)	(X)		
	Pistons rings, all types:								
	Oil types:								
35991 51	For motor vehicles (passenger cars, trucks, and busses).....	260.3	31.7	72.9	10.1	20.7	0.8	164.9	35.2
35991 53	All other oil type piston rings.....	11.6	10.4	(X)	(X)	(X)	(X)		
	Compression type:								
35991 55	For motor vehicles (passenger cars, trucks, and busses).....	437.8	55.1	107.0	15.4	37.7	2.0	403.0	79.1
35991 57	All other compression type piston rings.....	(NA)	26.7	(X)	(X)	(X)	(X)		
	Valves (intake and exhaust only):								
35991 61	For motor vehicles (passenger cars, trucks, and busses).....	131.4	80.9	13.4	8.1	71.3	1.4	148.9	86.1
35991 63	All other valves.....	(NA)	26.4	(X)	(X)	(X)	(X)		
35991 00	Carburetors, pistons, piston rings, valves, n.s.k..	(X)	18.1	(X)	(X)	(X)	(X)	(X)	( <sup>3</sup> )
35992 --	All other machine shop products, including flexible metal hose and tubing and metal bellows, total.....	(X)	859.6	(X)	(X)	(X)	(X)	(X)	<sup>3</sup> 885.5
	Flexible metal hose and tubing:								
35992 11	Copper and copper-base alloy.....	}	97.7	(X)	(X)	(X)	(X)	(X)	9.8
35992 13	Aluminum and aluminum-base alloy.....							(X)	5.5
35992 19	Other.....							(X)	55.0
35992 21	Metallic and semimetallic packing (except asbestos-metallic).....	(X)	10.2	(X)	(X)	(X)	(X)	(X)	15.9
35992 25	Metal bellows.....	(X)	12.9	(X)	(X)	(X)	(X)	(X)	14.2
35992 41	Pneumatic and hydraulic cylinders.....	(X)	125.3	(X)	(X)	(X)	(X)	(X)	86.8
35992 31	Carnival and amusement park equipment (Ferris wheels, merry-go-rounds, etc.) excluding coin operated amusement machines.....	}	547.0	(X)	(X)	(X)	(X)	(X)	6.4
35992 98	Other machine shop products.....							(X)	691.9
35992 71	Carburetors, rebuilt, all types.....							(X)	
35992 00	All other machine job products, n.s.k.....	(X)	53.7	(X)	(X)	(X)	(X)	(X)	( <sup>3</sup> )
35993 11	Machine shop jobwork.....	(X)	<sup>5</sup> 1,076.9	(X)	(X)	(X)	(X)	(X)	( <sup>2</sup> )
35990 00	Miscellaneous machinery, except electrical, n.s.k. (For establishments with 10 or more employees.)....	(X)	555.0	(X)	(X)	(X)	(X)	}	<sup>3</sup> 414.0
35990 02	Miscellaneous machinery, except electrical, n.s.k. (For establishments with less than 10 employees.)....	(X)	282.0	(X)	(X)	(X)	(X)		

(D) Withheld to avoid disclosing figures of individual companies. In some cases, figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or related figures. (NA) Not available. n.s.k. Not specified by kind.

<sup>1</sup>Revised. (X) Not applicable.

Footnotes continued on next page.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963--Continued

FOOTNOTES FOR TABLE 3-35G--Continued

<sup>1</sup>Motor vehicle parts data were published in the 1963 Census of Manufactures in Table 6E, "Production and Use of Selected Parts of the Type Used for Passenger Cars, Trucks, and Busses," of report MC63(2)-37A, Motor Vehicles and Equipment. There are significant differences in the manner in which the data were developed in the two Censuses including the following:

(a) In 1963 a total production figure was typically collected including, where appropriate, the quantities produced and consumed in the same establishment in producing a more finished product. In 1967 no production figures were collected.

(b) In 1963 separate quantity data were reported for the quantities of equipment "used in the assembly of new vehicles." These data were collected from automobile assembly plants and included the quantities of parts produced and consumed in the assembly of new vehicles. For 1967 a value rather than a quantity figure was collected and the data were reported by the plants producing the parts rather than by the assembly plants. No values are included for the quantities of parts produced and consumed in the same plant. The value of such parts shipped as interplant transfers from parts plants to assembly plants owned by the same company are included in both 1963 and 1967.

(c) In 1963 the quantity of parts "for replacement, export, and other purposes" was derived by subtracting from the total number of units produced the quantities used in the assembly of new vehicles as reported by motor vehicle assembly plants. In 1967 the quantity and value of export shipments was reported by parts producing plants.

(d) In 1963 it was not considered feasible for selected products to separately identify automotive type parts from similar parts used for tractors, construction machinery, boats, etc. In 1967 this separation was provided for.

<sup>2</sup>In 1963, product code 3599311, Machine shop jobwork, was not separately listed. This type of work was included as "All other machine shop products" by some establishments, and as contract and commission work by many establishments including a large number classified in other industries. (See also table 1, footnote 1)

<sup>3</sup>For 1963 data for product codes 3599100 and 3599200 are included in product code 3599000.

<sup>4</sup>Data are limited to rebuilding on a factory basis. Rebuilding operations performed in service stations, garages, etc. are excluded from the Census of Manufactures. Also, these figures may be somewhat understated because of the exclusion of data for establishments with fewer than 10 employees. Such establishments were typically not included in the mail portion of the 1967 Census of Manufactures, but were included in the published data by the use of estimates from administration records. These estimates are included in the value shown for product code 3599002. Although the use of such administrative records tends to create a small understatement for most specific products, the effect is more significant for those products typically produced in small establishments, such as rebuilding facilities.

<sup>5</sup>Value consists principally of receipts for work done on materials owned by others. The value includes approximately \$40 million of such receipts reported by establishments classified in industries other than industry 3599. There may be additional values of such work done by other industries reported as miscellaneous receipts rather than as "machine shop jobwork".

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3599.--MISCELLANEOUS MACHINERY, EXCEPT ELECTRICAL					
	Materials, parts, containers, and supplies, total.....		(X)	910.6	(X)	528.7
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons..	163.3	44.8	103.3	22.3
331012	Sheet and strip.....	..do.....	84.0	16.7	61.3	10.7
331013	Plates.....	..do.....	58.3	11.6	37.0	6.3
331015	Structural shapes.....	..do.....	42.5	7.6	23.4	4.2
331017	Wire and wire products.....	..do.....	13.1	4.7	5.2	2.7
331019	All other carbon steel mill shapes and forms.....	..do.....	122.7	18.7	31.0	7.2
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	..do.....	29.2	18.5	23.8	6.4
331029	All other alloy steel mill shapes and forms.....	..do.....	10.1	5.7	10.1	6.1
331031	Stainless steel.....	..do.....	20.9	32.1	12.0	17.8
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction).....	Million lbs.....	(D)	(D)	0.1	0.1
335790	Insulated wire and cable.....	Million lbs. copper content...	(D)	(D)	0.2	0.3
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	13.0	9.1	6.1	3.2
335123	Plate, sheet, and strip (including military cups and discs).	..do.....	6.5	5.2	3.2	2.1
335127	Pipe and tube.....	..do.....	(2)	(2)	6.0	3.5
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	..do.....	12.1	11.2	5.5	3.5
335205	Extruded shapes, including rod, bar, pipe, tube, etc.....	..do.....	14.1	9.3	6.7	5.1
335209	All other aluminum mill shapes and forms (wire, rolled rod, and bar, powder, welded tubing, etc.).....	..do.....	20.5	8.5	11.9	6.0
	Castings (rough and semifinished): <sup>3</sup>					
332011	Iron (gray and malleable).....	1,000 short tons..	74.6	35.5	55.0	22.1
332300	Steel.....	..do.....	24.5	19.9	16.3	9.6
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	44.0	29.0	23.0	15.3
336200	Copper and copper-base alloy.....	..do.....	(NA)	6.0	2.8	2.4
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	274.8	(X)	181.3
976000	Materials, containers, supplies, n.s.k. <sup>4</sup> .....		(X)	351.7	(X)	190.6

(D) Included with code 970099, "all other materials and components, parts, containers, and supplies consumed" in order to avoid disclosing figures for individual companies. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>These figures are understated by \$10 million or less because of apparent undercoverage of carbon steel pipe and tube.

<sup>2</sup>Included with material code 970099, "all other materials and components, etc."

<sup>3</sup>No data are available for 1967 on the quantities of castings produced and consumed in the same establishment. For 1963 the following data are available: iron castings, 7.7 thousand short tons; steel castings, 0.9 thousand short tons; aluminum castings, 2.9 million pounds; and copper castings, 3.2 million pounds.

<sup>4</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3599, these small establishments accounted for approximately 6 percent of payrolls and 8 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--** All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--** This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--** This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--** The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--** In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--** The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

**Textile mill products • Apparel and leather • Chemicals, rubber, and plastics • Machinery and equipment • Primary metals • Intermediate metal products • Processed foods • Lumber, furniture, and paper products • Stone, clay, and glass products.**

A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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# 1967 CENSUS OF MANUFACTURES

INDUSTRY SERIES

preliminary  
report

## Electric measuring instruments

SIC Code 3611

The Electric Measuring Instruments and Test Equipment Industry includes establishments primarily engaged in manufacturing pocket, portable, panelboard, and graphic recording instruments for measuring electricity, such as voltmeters, ammeters, wattmeters, watt-hour meters, demand meters, and other meters and indicating instruments. This industry also includes establishments primarily engaged in manufacturing analyzers for testing the electrical characteristics of internal combustion engines, radio apparatus, etc.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Electric Measuring Instruments Industry amounted to \$1,196.5 million, an increase of 60 percent compared with 1963. Value added by manufacture at \$809.5 million in 1967 was 60 percent more than value added in 1963. Average employment in the industry showed an increase of 30 percent from 1963 to a total of 62.4 thousand employees in 1967.

Of the \$1,196.5 million total value of shipments and other receipts of establishments classified as electric measuring instruments, \$216.6 million were products primary to other industries; and \$70.5 million were receipts for miscellaneous activities. The industry shipments of primary

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)
INDUSTRY 3611.--ELECTRIC MEASURING INSTRUMENTS														
1967 Census....	540	269	62.4	431.0	41.2	80.2	228.3	809.5	399.5	1,196.5	54.1	297.4	81	80
1966 ASM <sup>1</sup> .....	(NA)	(NA)	56.3	375.9	38.6	77.1	208.7	720.1	333.5	1,020.5	32.8	258.0	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	49.1	318.3	31.4	65.4	173.1	580.1	287.2	863.4	25.8	194.2	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	43.2	279.0	28.6	61.3	153.0	521.4	246.5	769.3	17.1	179.0	(NA)	(NA)
1963 Census....	560	209	44.7	273.6	30.1	59.9	149.6	505.3	245.4	749.2	19.2	181.3	84	78
1962 ASM <sup>1</sup> .....	(NA)	(NA)	*59.5	*340.0	*42.6	*89.0	*205.2	*588.7	*300.8	*879.6	*22.6	*202.2	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	*57.7	*335.9	*40.3	*82.5	*194.6	*558.0	*285.5	*830.9	*22.8	*196.8	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	*52.4	*304.0	*37.0	*75.3	*179.3	*518.3	*280.1	*800.7	*25.3	*175.6	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	*50.0	*281.5	*36.3	*74.1	*173.3	*509.9	*271.0	*770.6	*22.0	*168.1	(NA)	(NA)
1958 Census <sup>2</sup> ...	492	200	46.9	254.8	31.7	63.6	147.2	419.4	235.2	673.5	19.4	153.2	74	81

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 2 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued December 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

Harold C. Passer, Assistant Secretary for Economic Affairs

BUREAU OF THE CENSUS George Hay Brown, Director

products represented 81 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 84 percent in 1963.

The total value of electric measuring instruments shipped by all producers in 1967 was \$1,134.0 million of which \$909.4 million, or 80 percent, were shipped by plants classified in industry 3611, Electric Measuring Instruments, while the remainder was shipped by plants classi-

fied in other industries. This percent, called the coverage ratio, was 78 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3611, the Census Bureau collects current statistics on products. These data appear in the Current Industrial Reports series:

#### MA-38B, Selected Instruments and Related Products

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
INDUSTRY 3611.--ELECTRIC MEASURING INSTRUMENTS													
United States, total.....	540	269	62.4	431.0	41.2	80.2	228.3	809.5	399.5	1,196.5	54.1	44.7	505.3
Northeast.....	221	112	19.5	133.5	13.0	26.1	73.0	233.7	122.5	354.9	11.9	14.0	150.3
New York.....	63	28	3.6	24.1	2.6	5.5	14.7	38.8	22.1	62.3	3.3	3.8	38.2
North Central.....	127	63	12.9	81.1	8.6	16.9	44.6	161.8	70.6	234.3	8.6	10.5	109.1
Illinois.....	35	18	5.4	34.6	3.6	6.8	19.5	67.1	31.3	101.5	4.6	4.6	50.6
South.....	64	23	5.0	37.2	4.4	9.0	22.6	70.6	42.5	112.3	6.8	4.2	43.1
West South Central..	31	10	1.8	12.0	1.2	2.7	6.4	26.5	13.0	36.9	(D)	(D)	(D)
West.....	128	71	24.1	179.2	15.3	28.2	88.1	343.3	163.9	494.4	26.8	16.0	202.8
California.....	99	58	13.3	102.5	8.4	15.9	54.2	190.7	95.6	275.6	(D)	9.2	199.7

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (million units)	Value (million dollars)	Quantity (million units)	Value (million dollars)
3611- --	ELECTRIC MEASURING INSTRUMENTS, TOTAL.....	(X)	1,134.0	(X)	755.6
	Integrating instruments, electrical:				
36111 --	As reported in the census of manufactures.....	(X)	142.8	(X)	93.2
	As reported on Census annual Form MA-38B.....	(X)	138.8	(X)	89.2
	A.c. watt-hour meters:				
	Single phase:				
36111 10	Detachable types.....	3,415.6	50.2	2,762.3	42.4
36111 12	Base types.....	(X)	(1)	(X)	(1)
36111 13	House types.....	(X)	(1)	(X)	(1)
36111 14	Switchboard types.....	(X)	(1)	(X)	(1)
36111 15	Polyphase.....	362.4	14.2	235.0	8.4
36111 33	Combined watt-hour and demand meters, single phase and polyphase, and combined watt-hour and time switch meters.....	395.4	27.5	173.8	12.5
36111 41	Demand meters (including kw. and kv.-a).....	(X)	(1)	22.9	2.7
36111 51	Other electrical integrating meters, including d.c. watt-hour meters, ampere-hour meters, and other miscellaneous integrating instruments..	(X)	15.7	(X)	13.2
36111 61	Parts for integrating meters, electrical type (including meter mounting and test equipment), sold separately.....	(X)	41.2	(X)	20.0
	Test equipment for testing electrical, radio, and communication circuits and motors:				
36112 --	As reported in the census of manufactures.....	(X)	650.0	(X)	443.4
	As reported on Census annual Form MA-38B.....	(X)	639.1	(X)	428.4
	Test, measuring, and analyzing equipment for electronic and electrical circuits and equipment:				
	Voltage, current, and resistance measuring equipment (except multimeters):				
	Electronic:				
36112 20	Digital.....	(X)	32.6	(X)	26.4
36112 21	Analog.....	(X)	22.1	(X)	18.9
36112 22	Electrical (service-type equipment) (excluding panel meters).....	(X)	4.3	(X)	3.8
	Multimeters:				
36112 23	Electronic.....	(X)	13.1	(X)	7.8
36112 24	Electrical.....	(X)	7.2	(X)	2.7
	Power and energy measuring equipment:				
	Electronic:				
36112 25	Analog.....	(X)	6.9	(X)	3.8
36112 26	Digital.....				
36112 27	Electrical power measuring equipment, excluding integrating instruments.....	(X)	1.4	(X)	1.8
	Frequency measuring equipment:				
36112 67	Frequency meters, electronic:	157.3	40.7	5.5	1.8
36112 68	890 mc. and above.....			16.8	17.7
36112 69	Other.....			47.9	3.5
	Frequency meters, electrical and mechanical.....				
	Waveform measuring and/or analyzing equipment:				
	Oscilloscopes and plug-in accessories:				
36112 12	Under 10 mc.....	(X)	104.0	(X)	16.2
36112 13	10 mc. and over.....			(X)	53.9
36112 14	Oscillographs (low frequency).....	(X)	22.1	(X)	9.5
36112 16	Other waveform measuring and analyzing equipment.....				
	Signal generating equipment:				
36112 56	Audio.....	(X)	16.0	(X)	11.5
36112 58	RF (over 20 kc. to 890 mc.).....	(X)	18.0	(X)	16.5
36112 59	Microwave (890 mc. and above).....	(X)	22.7	(X)	11.1
	Field strength and intensity measuring equipment (including RFI measuring equipment):				
36112 91	Electronic.....	(X)	15.0	(X)	7.4
36112 92	Electrical.....	(X)	(2)	(X)	0.2
	Impedance and standing wave ratio measuring equipment (transfer function measuring equipment):				
36112 93	Electronic impedance and related measuring equipment.....	(X)	7.6	(X)	6.4
36112 94	Standing wave measuring equipment (slotted lines, sliding shorts, reflectometers, and other SWR equipment).....	(X)	2.5	(X)	5.6

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (million units)	Value (million dollars)	Quantity (million units)	Value (million dollars)
3611- --	ELECTRIC MEASURING INSTRUMENTS--Continued				
	Test equipment for testing electrical, radio, and communication circuits and motors--Continued				
36112 --	As reported on Census annual Form MA-38B--Continued				
	Test, measuring, and analyzing equipment for electronic and electrical circuits and equipment--Continued				
36112 96	Time measuring and counting equipment, electronic (electronic chronoscopes and chronometers, range calibrators, time interval measuring equipment, etc.) (excluding mechanical types).....			(X)	10.4
36112 97	X-Y plotters:	(X)	31.2		
36112 99	Electronic.....			(X)	9.1
	Other than electronic.....				
36112 44	Multifunction test and measuring equipment:				
	Combination and/or group test sets.....	(X)	38.2	(X)	16.4
	Component part test sets:				
36112 45	Electron tube test equipment.....	(X)	6.2	(X)	7.8
36112 46	Semiconductor test equipment.....	(X)	8.9	(X)	5.9
36112 47	Other component part test sets and equipment.....	(X)	5.5	(X)	4.5
36112 48	Equipment and subassembly test equipment, n.e.c.....	(X)	57.2	(X)	46.6
	Standards and calibration equipment for test and measuring equipment, excluding laboratory types:				
36112 71	Electronic.....	(X)	13.6	(X)	7.4
36112 73	Electrical.....	(X)	8.3	(X)	5.6
36112 52	Microwave test equipment, n.e.c. (890 mc. and above).....	(X)	20.5	(X)	13.6
36112 39	Analyzers for testing characteristics of internal-combustion engines.....	(X)	30.9	(X)	27.5
36112 82	Associated devices for electronic and electrical test and measuring equipment, excluding component parts.....	(X)	17.6	(X)	21.0
36112 98	Other test, measuring and analyzing equipment for electronic and electrical circuits and equipment.....	(X)	264.8	(X)	26.1
36113 --	Other electrical measuring instruments:				
	As reported in the census of manufactures.....	(X)	301.4	(X)	204.7
	As reported on Census annual Form MA-38B.....	(X)	283.0	(X)	185.1
	Electrical indicating instruments (instruments wherein a pointer is made to move over a calibrated scale, such movement effected by action of the electrical current and/or voltage):				
	Panel type instruments, including aircraft types, but excluding instruments for use on motor vehicles which are capable of accuracies with + or - 2 percent of full scale indication, but including + or - 3 percent miniaturized instruments and rectifier instruments, and enclosable in a case suitable for mounting on a panel:				
	Panel types, other than ruggedized or sealed (generally of 2 percent accuracy, not exceeding 4.5-inch flange diameter):				
36113 12	A.c. (including moving iron vane and dynamometer types).....	355.7	3.9	367.0	4.6
36113 13	D.c. (including rectifier and self-contained thermocouple types).....	3,891.8	27.0	1,468.3	16.3
	Panel types, ruggedized or sealed (generally of 2 percent accuracy, not exceeding 4.5-inch flange diameter):				
36113 14	A.c. (including moving iron vane and dynamometer types).....	213.7	2.7	116.4	1.4
36113 15	D.c. (including rectifier and self-contained thermocouple types).....	1,084.1	9.9	607.0	6.4
	Panel types, with control of signal indicating means (including instrument relays):				
36113 16	Indicating.....	314.2	14.8	121.0	10.1
36113 17	Nonindicating.....				
36113 18	All other panel type instruments.....	123.9	5.9	81.3	4.2
	Switchboard instruments, generally of accuracies with + or - 1 percent of full scale indication, enclosable in a case suitable for mounting on a panel, and which are an end product, are magnetically shielded, and are 4 inches or larger in size:				
36113 23	A.c. (including moving iron vane and dynamometer types).....			52.3	3.9
36113 25	D.c. (including rectifier and thermocouple types).....	141.2	10.5	61.1	3.2
	Portable instruments, generally capable of accuracies within + or - 2 percent of full scale indication, enclosable in a case so that they can be moved and used at various locations, and which are an end product:				
	Portable types (accuracy rating 0.11 percent to 0.50 percent):				
36113 32	A.c. (current and voltage, including moving iron vane and dynamometer).....	13.5	2.3	10.9	1.5
36113 33	D.c. (current and voltage).....			10.9	1.2
36113 34	All other, including watt, var. P.F., phase angle, etc.....	28.4	2.1	(NA)	0.2

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963--Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (million units)	Value (million dollars)	Quantity (million units)	Value (million dollars)
	ELECTRIC MEASURING INSTRUMENTS--Continued				
	Other electrical measuring instruments--Continued				
	As reported on Census annual Form MA-38B--Continued				
	Electrical indicating instruments (instruments wherein a pointer is made to move over a calibrated scale, such movement effected by action of the electrical current and/or voltage)--Continued				
	Portable types (accuracy rating 0.51 percent to 2 percent):				
36113 36	A.c. (current and voltage, including moving iron vane and dynamometer).....	18.7	2.2	7.7	0.5
36113 37	D.c. (current and voltage).....			7.3	0.5
36113 38	All other, including watt, var., P.F., phase angle, etc.....			1.3	0.3
36113 35	Laboratory portable instruments, with accuracies within + or - 1 percent up to 1/10 percent of full scale or better, all case sizes....	10.0	4.6	9.6	2.6
36113 45	Other electrical indicating instruments except self-balancing types, motor vehicle ammeters and voltmeters.....	(NA)	<sup>r</sup> 14.6	(X)	6.2
	Electrical recording instruments (portable and for panel mounting), excluding potentiometer and bridge self-balancing types:				
	Direct deflecting (direct acting), except temperature calibrated instruments (excluding oscillographic types):				
36113 60	A.c.....	13.2	3.2	6.0	1.8
36113 61	D.c.....	23.7	8.8	7.7	3.7
36113 62	Other.....				
	Oscillographic:				
36113 69	Galvanometer type.....	46.3	<sup>r</sup> 74.2	23.3	59.1
36113 70	Oscilloscope type.....				
36113 72	Other electrical recording instruments.....	(X)	<sup>r</sup> 38.4	(X)	21.0
36113 71	Parts for indicating and recording instruments.....	(X)	<sup>r</sup> 21.7	(X)	14.2
36113 85	Ammeters and voltmeters for motor vehicles.....	2,425.8	2.7	1,870.3	2.8
	Instrument and relay (tripping) transformers:				
36113 82	5 kv.-a and under.....	(X)	<sup>r</sup> 13.3	(X)	19.4
36113 83	Over 5 kv.-a.....	(X)	<sup>r</sup> 20.2		
36110 00	Electrical measuring instruments, n.s.k. (Represents principally establishments with 10 employees or more in 1967. See Note.).....	(X)	33.6	(X)	14.3
36110 02	Electrical measuring instruments, n.s.k. (Represents principally establishments with fewer than 10 employees. See Note.).....	(X)	6.2		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.e.c. Not elsewhere classified. n.s.k. Not specified by kind. <sup>r</sup>Revised. (X) Not applicable.

<sup>1</sup>Included with 36111 51 to avoid disclosing figures for individual companies.

<sup>2</sup>Code 36112 92 which is less than \$100 thousand is included with 36112 98 to avoid disclosing figures for individual companies.



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3611.--ELECTRIC MEASURING INSTRUMENTS					
	Materials, parts, containers, and supplies, total.....		(X)	347.6	(X)	217.1
	Mill shapes (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons..	1.0	0.5	0.9	0.5
331012	Sheet and strip.....	..do.....	12.0	2.8	8.8	1.6
331013	Plates.....	..do.....	(1)	(1)	0.1	(Z)
331015	Structural shapes.....	..do.....	0.1	0.1	0.2	0.3
331017	Wire and wire products.....	..do.....	0.6	0.8		
331019	All other carbon steel mill shapes and forms.....	..do.....	10.9	10.5		
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	..do.....	8.6	2.6	(Z)	(Z)
331029	All other alloy steel mill shapes and forms.....	..do.....			3.7	1.7
331031	Stainless steel.....	..do.....	1.3	1.5	0.6	0.8
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction only).....	Million lbs.....	2.6	2.3	1.3	1.1
335790	Insulated wire and cable.....	Million lbs (copper content).....	17.6	8.7	6.4	3.2
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	3.0	1.7	1.3	0.9
335123	Plate, sheet, and strip (including military cups and discs).....	..do.....	2.2	1.6	1.5	1.3
335127	Pipe and tube.....	..do.....	0.9	0.3		
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	..do.....	6.2	3.3	4.4	2.4
335205	Extruded shapes (including extruded rod, bar, pipe tube, etc.).....	..do.....	1.6	1.3	0.9	0.8
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	..do.....	1.2	0.5	2.1	0.8
	Castings (rough and semifinished): <sup>2</sup>					
332300	Steel.....	1,000 short tons..	0.2	0.7	0.2	0.7
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	2.6	1.7	1.8	1.2
336200	Copper and copper-base alloy.....	..do.....	0.1	0.1	0.1	0.1
	Fractional horsepower electric motors and generators (under 1 hp.): <sup>2</sup>					
362110	Timing motors, synchronous and subsynchronous.....	Millions.....	-	-	0.3	1.8
362115	Other fractional horsepower electric motors and generators (excluding timing motors).....	..do.....	0.2	1.3	0.1	0.8
	Bearings:					
356218	Ball.....	..do.....	(X)	0.6	(X)	0.9
356228	Roller.....	..do.....	-	-	(X)	
367010	Electron tubes, except X-ray <sup>2</sup> .....	Million units.....	6.8	8.1	8.8	10.2
367408	Solid state semiconductors <sup>2</sup> .....	..do.....	24.3	19.9	12.8	9.4
970099	All other materials and components, parts, containers, and supplies consumed.....	..do.....	(X)	215.0	(X)	140.7
976000	Materials, containers, supplies, n.s.k. <sup>3</sup> .....	..do.....	(X)	71.7	(X)	35.9

- Represents zero. n.s.k. Not specified by kind. (X) Not applicable. (Z) Less than 0.1 when rounded.

<sup>1</sup>Included with 331019 to avoid disclosing figures for individual companies.

<sup>2</sup>No data are available on the quantities of castings, fractional horsepower electric motors and generators. Electron tubes or solid state semiconductors produced and consumed in the same establishment.

<sup>3</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3611, these small establishments accounted for approximately 0.5 percent of payrolls and 0.5 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





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*Current Industrial Reports present data for industries in the following broad categories:*

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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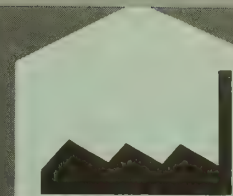
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# 1967 CENSUS OF MANUFACTURES



MC67(P)-36A-2

## INDUSTRY SERIES

### Transformers

SIC Code 3612

### preliminary report

The Transformers Industry includes establishments primarily engaged in manufacturing power, distribution and specialty transformers. Establishments primarily engaged in manufacturing radio frequency or voice frequency transformers, coils, or chokes are classified in industry 3679, and resistance welder transformers in Industry 3623.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Transformers Industry amounted to \$1,257.1 million, an increase of 74 percent

compared with 1963. Value added by manufacture at \$719.8 million in 1967 was 89 percent more than value added in 1963. Average employment in the industry showed an increase of 43 percent from 1963 to a total of 47.6 thousand employees in 1967.

Of the \$1,257.1 million total value of shipments and other receipts of establishments classified as transformers, \$96.6 million were products primary to other industries; and \$21.3 million were receipts for miscellaneous activities. The industry shipments of primary products represented 92 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was also 92 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total	With 20 employees or more (number)	Number	Payroll (million dollars)	Number	Man-hours (millions)	Wages (million dollars)							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)							
INDUSTRY 3612.--TRANSFORMERS														
1967 Census....	194	126	47.6	331.6	35.6	71.5	219.1	719.8	561.4	1,257.1	54.0	248.5	92	95
1966 ASM <sup>1</sup> .....	(NA)	(NA)	41.5	281.4	30.6	61.5	183.0	584.4	468.6	1,053.0	40.8	204.1	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	37.3	252.6	27.1	56.5	161.6	516.7	423.4	921.8	19.4	187.5	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	35.1	227.2	25.6	52.4	145.1	442.7	375.0	805.3	13.8	153.4	(NA)	(NA)
1963 Census....	177	99	33.4	209.5	23.6	46.9	129.6	381.5	337.0	722.9	13.2	134.9	92	94
1962 ASM <sup>1</sup> .....	(NA)	(NA)	35.1	215.2	24.6	49.1	133.9	400.8	345.8	740.4	22.6	143.0	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	34.9	207.4	23.5	46.2	128.1	402.3	303.8	708.1	40.5	127.0	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	36.6	211.9	24.7	48.6	129.2	422.5	308.4	718.3	14.3	132.1	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	35.5	201.7	24.0	48.0	125.9	429.1	296.9	721.6	14.9	127.4	(NA)	(NA)
1958 Census <sup>2</sup> ...	175	82	34.6	186.4	22.6	45.1	108.6	364.2	256.9	642.3	13.8	115.8	94	93

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director

The total value of transformers shipped by all producers in 1967 was \$1,191.3 million of which \$1,139.2 million, or 95 percent, were shipped by plants classified in industry 3612, Transformers, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 94 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3612, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

M36C, Fluorescent Lamp Ballasts.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3612.--TRANSFORMERS												
United States, total.....	194	126	47.6	331.6	35.6	71.5	219.1	719.8	561.4	1,257.1	54.0	33.4	381.5
Northeast.....	56	33	20.2	155.3	14.3	29.3	99.7	311.5	198.3	496.5	27.8	16.5	175.2
New York.....	16	10	0.9	5.4	0.7	1.4	3.2	10.5	8.9	17.9	0.3	0.8	4.8
North Central.....	75	56	18.0	117.8	13.9	27.4	79.3	234.8	201.2	430.2	11.7	11.6	120.8
Illinois.....	25	16	6.4	35.8	5.2	9.9	25.1	58.1	62.8	118.7	3.1	4.8	46.8
Wisconsin.....	12	10	2.4	18.4	1.7	3.3	11.0	38.8	29.5	67.0	(D)	1.5	15.6
South.....	33	21	7.9	47.8	6.3	12.5	32.9	142.4	137.5	275.8	9.1	4.0	67.9
West South Central..	11	5	0.8	4.6	0.6	1.2	2.9	12.2	13.6	25.1	(D)	0.5	5.2
West.....	30	16	1.5	10.7	1.1	2.3	7.2	31.1	24.4	54.6	5.4	1.4	17.7
California.....	24	14	1.3	9.8	1.0	2.1	6.6	27.5	21.5	48.4	(D)	1.1	15.1

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers					
		1967		1963			
		Quantity (million units)	Value (million dollars)	Quantity (million units)	Value (million dollars)		
3612- --	TRANSFORMERS, TOTAL.....	(X)	1,191.3	(X)	692.2		
36121 --	Natural-draft dry type transformers (specialty transformers).....	(X)	214.4	(X)	163.0		
36121 13	Signalling, doorbell, and toy transformers.....	2.4	8.0	2.8	10.0		
36121 15	Control transformers, 250 v.a. and smaller.....	0.3	1.6				
36121 17	Machine tool control transformers.....	0.6	5.3				
36121 21	Luminous tube transformers for hot and cold operation (1,000 volts and above).....	0.6	5.8	0.4	3.9		
36121 31	Ignition, including oil- and gas-furnace ignition applications but excluding internal combustion engine ignition.....	1.0	6.1	1.2	7.0		
36121 40	Fluorescent lamp ballasts:						
	As reported on census of manufactures.....	42.1	118.8	38.4	93.3		
	As reported on Census Form M36C.....	45.2	117.0	36.1	90.7		
	Uncorrected power factor type:						
36121 61	Switch start 40 watt and under, total:						
36121 62	20 watt and less.....	7.7	3.1	8.9	3.3		
36121 63	21 to 40 watt.....	2.1	1.7	2.1	1.8		
36121 66	All other including rapid start.....	3.5	5.4	2.7	3.9		
	Corrected power factor type:						
	Slimline and instant start:						
36121 67	Two lamp 96T12 and two 72T12.....	6.1	20.2	5.8	20.5		
36121 68	Other slimline and instant start.....	1.0	4.8	1.0	5.3		
	Rapid start:						
36121 71	Two lamp 40 watt.....	19.1	44.5	11.5	29.1		
36121 72	800 to 1,000 ma.....	1.8	14.9	1.1	9.6		
36121 73	1,500 ma.....	1.1	13.4	0.7	9.3		
36121 74	Other rapid start.....	1.5	5.0	1.0	3.3		
	Switch start:						
36121 75	20 watt and less.....	(D)	(D)	(Z)	0.1		
36121 76	Two lamp 40 watt.....	0.6	1.7	0.9	2.6		
36121 77	Other 21 to 40 watt.....	0.1	0.5	0.1	0.5		
36121 78	Above 40 watt.....	(Z)	0.4	0.1	0.5		
36121 79	All other.....	(D)	(D)	0.2	1.0		
36121 42	Series circuit lighting transformers.....	( <sup>1</sup> )	( <sup>1</sup> )	(NA)	(NA)		
	Mercury vapor lamp transformers (ballasts), multiple-supply type:						
36121 43	Core and coil units.....	0.6	6.1	0.4	13.4		
36121 47	Indoor encased units.....	0.5	6.4				
36121 49	Outdoor weatherproof units.....						
36121 53	Sodium vapor lamp transformers (ballasts) multiple-supply type.....	( <sup>1</sup> )	( <sup>1</sup> )				
	General-purpose transformers, 600 volts and below:						
36121 81	0.250 kv.-a. through 3 kv.-a.....	12.1	8.5	(NA)	35.0		
36121 85	Above 3 kv.-a.....	2.1	24.0				
36121 89	Saturable core reactors.....	1.0	1.8				
36121 93	Voltage regulating transformers, except transmission and distribution voltage regulators.....	4.9	11.2				
36121 98	Miscellaneous specialty transformers and reactors, except electronic applications.....	(X)	19.6				
36121 00	Specialty transformers, n.s.k.....	(X)	1.2	(X)	0.4		

Product code	Product	Total shipments including interplant transfers					
		1967			1963		
		Quantity (1,000 units)	Total KVA (millions)	Value (million dollars)	Quantity (1,000 units)	Total KVA (millions)	Value (million dollars)
3612- --	TRANSFORMERS--Continued						
36122 --	Power and distribution transformers, except parts.....	(X)	(X)	748.9	(X)	(X)	434.5
	Single- and three-phase transformers, 500 kv.-a. and smaller:						
	Distribution transformers, liquid-immersed, 167 kv.-a. and smaller, 18 kv. and below, including subway transformers:						
36122 03	50 kv.-a. and smaller.....	1,231.1	8.4	296.6	825.2	26.3	256.9
36122 07	51 to 167 kv.-a.....	50.5	1.9	28.5			
	All other distribution transformers and all other transformers, except special purpose transformers, liquid-immersed, all voltage ratings:						
36122 13	168 kv.-a. to 500 kv.-a., and 18 kv. and below.....	19.3	1.6	50.8			
36122 15	500 kv.-a. and smaller, above 18 kv.....	1.9	1.1	18.0			
36122 18	Distribution and all other transformers except special purpose transformers, dry-type, all high voltage ratings, low voltage 601 volts and over.....	4.0	3.2	3.1			

See footnotes at end of table.

## 1967 CENSUS OF MANUFACTURES

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers					
		1967			1963		
		Quantity (1,000 units)	Total KVA (millions)	Value (million dollars)	Quantity (1,000 units)	Total KVA (millions)	Value (million dollars)
3612- --	TRANSFORMERS--Continued						
36122 --	Power and distribution transformers, except parts-Continued						
	Single- and three-phase transformers, 501 kv.-a. through 10,000 kv.-a. Small power transformers, including transformers for primary unit substations, and all other transformers except special purpose transformers, liquid-immersed and dry-type, all voltages, based on self-cooled nameplate rating:						
36122 25	Liquid-immersed.....	9.4	13.1	85.5	9.4	17.4	78.9
36122 27	Dry-type.....	13.1	6	12.1			
36122 29	Secondary unit substation transformers, liquid-immersed and dry-type, all kv.-a.'s, all high voltage ratings, low voltage 600 volts and under.....	3.5	3.0	38.6			
36122 31	Single- and three-phase transformers, 10,000 kv.-a. and larger (Large power transformers, including primary unit substation transformers; all ratings of regulating transformers, and all other transformers, except special purpose transformers, liquid-immersed and dry-type, all voltages based on self-cooled nameplate rating for OA/FA, or OA/FA/FA or OA/FOA/FOA).....	(NA)	(NA)	167.5	0.9	59.9	97.5
36122 35	Network transformers, liquid-immersed and dry-type, all ratings, less network protector.....	4.3	3.4	41.2	(NA)	(NA)	(NA)
36122 00	Power and distribution transformers, n.s.k.....	(X)	(X)	7.0	(X)	(X)	1.2
Product code	Product	Total shipments including interplant transfers					
		1967		1963			
		Quantity (number of units)	Value (million dollars)	Quantity (number of units)	Value (million dollars)		
3612- --	TRANSFORMERS--Continued						
34123 --	Power regulators, boosters, and reactors, other transformers, and transformer parts.....	(X)	228.0	(X)	90.3		
36123 13	Transmission and distribution voltage regulators, single- and three-phase induction voltage regulators, of all kv.-a. ratings, 1,201 volts and above.....	(X)	75.6	(X)	50.4		
36123 53	Step voltage regulators, 1,201 through 69,000 volts, 250 kv.-a. and smaller (single-phase), 2,500 kv.-a. and smaller (three-phase).....	(X)	21.3				
36123 31	Reactor and special purpose transformers, liquid-immersed and dry-type, all voltages and kv.-a.'s, such as: Reactors, furnace transformers, rectifier transformers, locomotive transformers, grounding transformers, ground fault neutralizers, mobile transformers, mobile unit substation, and integral single-circuit unit substations.....	(X)	39.2				
36123 73	Renewal and repair parts for all specialty transformers.....	(X)	1.3	(X)	39.9		
36123 77	Parts and accessories for all transformers, except specialty transformers.	(X)	65.6				
36123 00	Transformer parts and supplies, power regulators, boosters, and reactors, n.s.k.....	(X)	11.3			(X)	( <sup>2</sup> )
36120 00	Transformers, n.s.k. (Represents establishments with 10 employees or more in 1967. See Note.).....	(X)	11.1	(X)	4.4		
36120 02	Transformers, n.s.k. (Represents establishments with fewer than 10 employees in 1967. See Note.).....	(X)	2.4				

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable. (Z) Less than 0.1 when rounded.

<sup>1</sup>Product codes 36121 42 and 36121 53 are combined with product code 36121 98 in order to avoid disclosing figures of individual companies.

<sup>2</sup>In 1963, code 36123 00 "Transformer parts and supplies, power regulators, boosters and reactors, n.s.k." is included with product codes 36123 13, 36123 53 and 36123 31.

## 1967 CENSUS OF MANUFACTURES

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3612.--TRANSFORMERS					
	Materials, components, parts, containers, and supplies consumed, total.....		(X)	503.7	(X)	324.5
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	18.5	3.0	8.0	1.4
331012	Sheet and strip.....	...do.....	168.6	43.8	164.0	39.3
331013	Plates.....	...do.....	57.0	7.6	48.3	6.5
331015	Structural shapes.....	...do.....	9.3	1.6	11.6	1.7
331019	All other carbon steel mill shapes and forms.....	...do.....	21.0	10.6	9.9	4.1
331020	Alloy steel (except stainless).....	...do.....	164.0	71.0	107.6	42.7
331031	Stainless steel mill shapes and forms.....	...do.....	1.1	1.0	0.9	0.8
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction only).....	million lbs.....	90.1	44.6	62.3	32.1
335790	Insulated wire and cable.....	million lbs..... (copper content)	93.6	59.1	81.9	34.9
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	million lbs.....	26.3	12.0	15.9	6.0
335123	Plate, sheet, and strip (including military cups and discs).....	...do.....	(NA)	4.8	30.1	2.0
335127	Pipe and tube.....	...do.....	1.5	0.8	1.0	0.6
	Aluminum and aluminum-base alloy:					
335205	Extruded shapes, (including extruded rod, bar, pipe tube, etc.).....	...do.....	6.1	3.7	1.6	0.7
335207	Sheet plate and foil.....	...do.....			5.2	2.4
335209	All other aluminum mill shapes and forms.....	...do.....				
970099	All other materials and components, parts, containers and supplies consumed.....		(X)	231.0	(X)	143.7
976000	Materials, components, parts, containers and supplies consumed, n.s.k. <sup>1</sup> .....		(X)	9.7	(X)	5.4

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3612, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.

# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**U.S. DEPARTMENT OF COMMERCE  
BUREAU OF THE CENSUS  
WASHINGTON, D.C. 20233**

**POSTAGE AND FEES PAID  
U.S. DEPARTMENT OF COMMERCE**

**OFFICIAL BUSINESS**

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

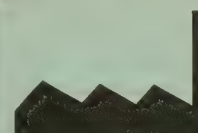
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-36A-3

INDUSTRY SERIES

**preliminary  
report**

## Switchgear and switchboard apparatus

SIC Code 3613

The Switchgear and Switchboard Apparatus Industry includes establishments primarily engaged in manufacturing switchgear and switchboard apparatus. Important products of this industry include power switches, circuit breakers, power switching equipment, and similar switchgear for general industrial application; switchboards and cubicles, control and metering panels, power fuse mountings, and similar switchboard apparatus and supplies. Establishments primarily engaged in manufacturing industrial controls, are classified in industry 3622, and those manufacturing current-carrying wiring devices in industry 3643.

definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Switchgear and Switchboard Apparatus Industry amounted to \$1,686.0 million, an increase of 54 percent compared with 1963. Value added by manufacture at \$1,026.8 million in 1967 was 59 percent more than value added in 1963. Average employment in the industry showed an increase of 27 percent from 1963 to a total of 68.5 thousand employees in 1967.

The classification of establishments for which data are tabulated in this report is based upon the

Of the \$1,686.0 million total value of shipments and other receipts of establishments classified

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(per-cent)	(per-cent)
INDUSTRY 3613.--SWITCHGEAR AND SWITCHBOARD APPARATUS														
1967 Census....	481	281	68.5	488.8	49.5	100.2	304.1	1,026.8	669.9	1,686.0	38.8	339.0	89	89
1966 ASM <sup>1</sup> .....	(NA)	(NA)	64.7	449.3	46.8	96.8	278.6	972.1	607.7	1,549.0	32.1	310.3	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	57.6	386.2	40.7	83.5	236.1	797.2	513.4	1,299.3	26.0	254.3	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	55.9	366.6	38.0	79.3	217.4	706.1	489.9	1,175.4	20.6	238.1	(NA)	(NA)
1963 Census....	400	214	54.0	338.9	38.1	76.9	204.9	647.8	452.2	1,093.7	18.2	210.6	87	89
1962 ASM <sup>1</sup> .....	(NA)	(NA)	59.6	356.3	43.4	84.1	212.0	654.8	458.5	1,108.4	16.6	224.3	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	57.1	336.3	41.1	81.0	197.8	606.6	430.4	1,039.3	15.6	216.2	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	57.4	325.9	41.9	82.9	194.5	636.6	422.0	1,038.8	24.4	204.3	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	57.1	319.3	41.7	82.5	190.2	638.8	429.5	1,047.6	*35.5	195.7	(NA)	(NA)
1958 Census <sup>2</sup> ....	402	203	52.9	283.2	36.3	72.8	170.5	555.0	376.0	962.6	17.8	164.4	80	90

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued November 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

Harold C. Passer, Assistant Secretary for Economic Affairs

**BUREAU OF THE CENSUS** George Hay Brown, Director

as switchgear and switchboard apparatus, \$173.0 million were products primary to other industries; and \$78.5 million were receipts for miscellaneous activities. The industry shipments of primary products represented 89 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 87 percent in 1963.

The total value of switchgear and switchboard apparatus shipped by all producers in 1967 was \$1,594.6 million of which \$1,434.5 million, or 89 percent, were shipped by plants classified in

industry 3613, Switchgear and Switchboard Apparatus, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was also 89 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

#### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3613, the Census Bureau collects current statistics on products. These data appear in the Current Industrial Reports series:

MA-36A(67)-1; Switchgear, Switchboard Apparatus, Relays, and Industrial Controls.

## 1967 CENSUS OF MANUFACTURES

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TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total	With 20 employees or more (number)	Number	Payroll	Number	Man-hours	Wages						
	(number)		(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
INDUSTRY 3613.--SWITCHGEAR AND SWITCHBOARD APPARATUS													
United States, total.....	481	281	68.5	488.8	49.5	100.2	304.1	1,026.8	669.9	1,686.0	38.8	54.0	647.8
New England.....	39	25	6.7	43.0	4.7	9.2	24.3	92.6	71.9	164.2	(D)	5.2	52.5
Connecticut.....	16	12	3.8	24.4	2.7	5.2	13.5	57.8	46.0	103.3	2.5	2.5	28.5
Middle Atlantic.....	111	66	25.4	207.0	17.6	34.6	126.0	414.6	241.5	651.9	(D)	22.6	286.8
New York.....	48	27	2.9	18.0	2.0	3.9	11.4	34.8	29.7	62.9	1.1	2.9	33.0
New Jersey.....	41	26	5.1	37.0	3.5	7.0	21.8	72.5	42.0	116.0	(D)	5.2	64.4
Pennsylvania.....	22	13	17.3	152.1	12.1	23.7	92.8	307.3	169.7	473.0	10.1	14.4	189.4
East North Central...	139	75	16.6	116.8	12.1	24.7	72.4	233.1	141.1	371.4	9.9	12.8	150.9
Ohio.....	34	18	2.9	19.4	2.2	4.5	13.4	54.2	29.6	82.2	1.0	2.0	33.7
Illinois.....	58	33	8.1	53.9	6.0	12.6	32.2	104.2	61.7	164.2	5.0	5.7	64.2
Michigan.....	27	12	2.2	18.1	1.6	3.2	11.3	24.5	22.3	47.1	1.2	1.6	15.3
West North Central...	21	12	5.2	31.5	4.3	9.6	23.1	87.7	37.3	123.4	1.2	3.9	44.6
South Atlantic.....	36	23	4.4	22.8	3.4	6.9	15.4	59.5	42.0	97.0	(D)	(D)	(D)
East South Central...	16	10	3.5	19.3	2.9	5.7	14.2	46.4	30.3	79.3	0.5	(D)	(D)
West South Central...	28	14	1.2	8.4	0.9	1.9	5.2	18.5	27.0	44.4	(D)	(D)	(D)
Mountain.....	9	4	0.2	1.0	0.1	0.3	0.7	2.2	2.4	4.8	(Z)	0.3	4.2
Pacific.....	82	52	5.2	39.0	3.6	7.4	22.9	72.1	76.4	149.7	2.2	4.0	43.4
California.....	65	41	4.6	34.7	3.2	6.7	20.6	63.5	63.6	127.2	2.0	3.7	38.5

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.



TABLE 3. Value of Shipments by All Producers: 1967 and 1963

(Includes value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Value of shipments (million dollars)	
		1967	1963
3613- --	SWITCHGEAR AND SWITCHBOARD APPARATUS, TOTAL.....	1,594.6	1,008.5
36131 00	Switchgear, except ducts and relays:		
	As reported in the Census of Manufactures.....	454.5	<sup>1</sup> 437.2
	As reported on Census Annual Form MA-36A <sup>2</sup> .....	<sup>3</sup> 438.2	260.3
36132 00	Power circuit breakers, and voltages:		
	As reported in the Census of Manufactures.....	209.8	<sup>4</sup> 208.9
	As reported on Census Annual Form MA-36A <sup>2</sup> .....	<sup>5</sup> 202.4	<sup>4</sup> 211.6
36133 00	Low voltage panelboards and distribution boards and other switching and interrupting devices, 750 volts and under:		
	As reported in the Census of Manufactures.....	377.0	304.2
	As reported on Census Annual Form MA-36A <sup>2</sup> .....	<sup>5</sup> 343.8	282.4
36134 00	Fuses and fuse equipment, under 2,300 volts (except power distribution cut-outs):		
	As reported in the Census of Manufactures.....	69.2	41.9
	As reported on Census Annual Form MA-36A <sup>2</sup> .....	68.5	40.0
36135 00	Molded case circuit breakers, 750 volts and under:		
	As reported in the Census of Manufactures.....	170.3	( <sup>4</sup> )
	As reported on Census Annual Form MA-36A <sup>2</sup> .....	164.0	( <sup>4</sup> )
36136 00	Duct, including plug-in units and accessories, 750 volts and under:		
	As reported in the Census of Manufactures.....	62.8	( <sup>1</sup> )
	As reported on Census Annual Form MA-36A <sup>2</sup> .....	62.5	32.8
36137 00	Relays, control circuit:		
	As reported in the Census of Manufactures.....	193.7	( <sup>1</sup> )
	As reported on Census Annual Form MA-36A <sup>2</sup> .....	<sup>6</sup> 193.9	123.8
36130 00	Switchgear and switchboard apparatus, n.s.k. (represents principally establishments with 10 employees or more in 1967. See Note.).....	51.4	16.2
36130 02	Switchgear and switchboard apparatus, n.s.k. (represents principally establishments with fewer than 10 employees in 1967. See Note.).....	5.9	

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind. <sup>2</sup>Revised.

<sup>1</sup>In 1963 product code 36131 00 (Switchgear, except ducts and relays) was combined with product codes 36136 00 (Duct, including plug-in units and accessories, 750 volts and under) and 3613700 (Relays, control circuit).

<sup>2</sup>See Current Industrial Reports Series MA-36A, Switchgear, Switchboard Apparatus, Relays and Industrial Controls, for detailed product data.

<sup>3</sup>Product class code 36131 has been revised from figure reported on 1967 Census Annual Form MA-36A. Detail items which were revised on MA-36A include product code 36131 41, changed to \$87,314; product code 36131 51 changed to \$13.5 million; product codes 36131 81, 36131 91, and 36131 93 changed to \$31.3 million; and product code 36131 83 changed to \$22.3 million.

<sup>4</sup>In 1963 product code 36132 00 (Power circuit breakers, all voltages) was combined with product code 36135 00 (Molded case circuit breakers, 750 volts and under).

<sup>5</sup>Product class code 36133 has been revised from figure shown in 1967 Census Annual Form MA-36A. The detail item revised on MA-36A was product code 36133 11, which changed to \$39.5 million.

<sup>6</sup>Product class code 36137 has been revised from figure shown in 1967 Census Annual Form MA-36A. The detail item revised on MA-36A was product code 36137 01, which changed to \$179.7 million.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3613.--SWITCHGEAR AND SWITCHBOARD APPARATUS					
	Materials, parts, containers and supplies, total.....		(X)	602.9	(X)	400.4
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	38.6	6.2	20.8	3.5
331012	Sheet and strip.....	...do.....	198.3	31.4	200.5	33.8
331013	Plates.....	...do.....	17.8	2.8	17.0	2.1
331015	Structural shapes.....	...do.....	14.8	2.6	10.4	2.2
331019	All other carbon steel mill shapes and forms.....	...do.....	(NA)	4.5	6.4	1.8
331020	Alloy steel (except stainless).....	...do.....	5.1	2.2	2.7	1.4
331031	Stainless steel.....	...do.....	2.3	2.5	0.6	0.7
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction only).....	Million lbs.....	7.9	6.9	3.0	2.0
335790	Insulated wire and cable.....	Million lbs. (copper content)	10.6	10.0	5.2	3.7
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	41.9	31.8	35.6	18.8
335123	Plate, sheet and strip (including military cups and discs)...	...do.....	13.2	9.1	11.5	6.7
335127	Pipe and tube.....	...do.....	2.4	2.1	2.4	1.3
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	...do.....	6.2	3.2	2.7	1.3
335205	Extruded shapes (including extruded rod, bar, pipe tube, etc.)	...do.....	13.8	6.0	5.6	3.0
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing).....	...do.....	2.6	1.5	2.0	1.0
	Castings (rough and semifinished): <sup>1</sup>					
332300	Steel.....	1,000 short tons.	3.3	2.3	1.3	1.3
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	6.9	5.7	3.2	2.7
336200	Copper and copper-base alloy.....	...do.....	14.1	13.2	10.3	6.9
	Industrial electrical control equipment (received for incorporation only into other industrial electrical control equipment shipped, as such, by this plant):					
362200	Purchased from other companies.....		(X)	<sup>2</sup> 73.8	(X)	<sup>2</sup> 40.0
362209	Received from other plants of your company.....		(X)	<sup>2</sup> 75.8	(X)	<sup>2</sup> 47.3
282130	Thermoplastic resins, including modified resins.....	Million lbs.....	(NA)	2.3	3.7	1.1
282140	Thermosetting resins.....	...do.....	16.6	6.2	12.3	4.5
970099	All other materials and components, parts, containers and supplies consumed.....		(X)	231.6	(X)	177.3
976000	Materials, containers, supplies, n.s.k. <sup>3</sup> .....		(X)	69.2	(X)	35.8

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>No data are available on the quantities of castings produced and consumed in the same establishment.<sup>2</sup>An indeterminate amount of materials other than industrial electrical control equipment are included.<sup>3</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3613, these small establishments accounted for approximately 0.4 percent of payrolls and 0.4 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-36A-4

INDUSTRY SERIES

preliminary  
report

## Motors and generators

SIC Code 3621

The Motors and Generators Industry includes establishments primarily engaged in manufacturing electric motors (except starting motors) and power generators; motor generator sets; railway motors and control equipment; and motors, generators, and control equipment for gasoline, electric, and oil electric busses and trucks. Establishments primarily engaged in manufacturing turbo-generators are classified in industry 3511, and starting motors and battery charging generators for internal combustion engines in industry 3694.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Motors and Generators Industry amounted to \$2,363.6 million, an increase of 43 percent compared with 1963. Value added by manufacture at \$1,406.0 million in 1967 was 42 percent more than value added in 1963. Average employment in the industry showed an increase of 17 percent from 1963 to a total of 110.3 thousand employees in 1967.

Of the \$2,363.6 million total value of shipments and other receipts of establishments classified as motors and generators, \$379.6 million were products primary to other industries; and \$74.0 million were receipts for miscellaneous activities. The industry ship-

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3621.--MOTORS AND GENERATORS														
1967 Census....	406	275	110.3	750.4	83.5	168.9	504.7	1,406.0	962.4	2,363.6	100.8	443.3	83	83
1966 ASM <sup>1</sup> .....	(NA)	(NA)	112.3	730.0	87.2	174.3	494.3	1,365.7	968.7	2,288.8	84.3	445.7	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	102.0	662.2	76.7	156.8	448.3	1,178.8	868.5	2,043.8	64.8	375.6	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	94.9	609.8	69.2	141.9	392.8	1,097.8	743.8	1,820.0	42.4	348.6	(NA)	(NA)
1963 Census.....	384	244	94.2	583.2	68.7	140.2	378.8	993.2	715.2	1,709.8	35.8	321.5	81	84
1962 ASM <sup>1</sup> .....	(NA)	(NA)	94.0	576.0	67.7	135.7	361.8	974.8	697.8	1,657.8	34.8	313.0	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	95.9	570.5	67.7	133.3	349.2	933.1	640.9	1,567.3	29.4	305.1	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	101.7	581.9	72.3	141.4	358.9	966.6	676.1	1,647.8	37.2	300.1	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	99.6	557.6	71.3	142.8	350.3	975.8	663.8	1,614.7	31.9	319.3	(NA)	(NA)
1958 Census <sup>2</sup> ...	378	237	93.5	488.9	64.8	127.8	303.8	813.1	545.5	1,392.6	28.3	272.5	83	85

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued January 1970

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

Harold C. Passer, Assistant Secretary for Economic Affairs

BUREAU OF THE CENSUS George Hay Brown, Director



ments of primary products represented 83 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 81 percent in 1963.

The total value of motors and generators shipped by all producers in 1967 was \$2,304.3 million of which \$1,910.0 million, or 83 percent, were shipped by plants classified in industry 3621, Motors and Generators, while the

remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 84 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3621, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-36H, Motors and Generators.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967										1963		
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3621.--MOTORS AND GENERATORS												
United States, total.....	406	275	110.3	750.4	83.5	168.9	504.7	1,406.0	962.4	2,363.6	100.8	94.2	993.2
New England.....	24	19	3.8	21.5	2.4	4.5	13.2	46.8	48.0	92.6	0.9	3.0	29.8
New Hampshire.....	6	5	0.5	2.5	0.4	0.8	1.8	4.5	2.7	7.5	0.1	(D)	(D)
Massachusetts.....	7	6	0.7	3.7	0.5	1.0	2.2	5.3	2.8	7.8	0.1	(D)	(D)
Connecticut.....	11	8	2.6	15.3	1.5	2.7	9.1	37.0	42.5	77.3	0.7	1.9	23.8
Middle Atlantic.....	81	59	29.4	216.2	21.8	44.7	142.2	431.6	269.7	704.3	31.6	26.5	314.2
New York.....	33	24	17.1	135.3	13.1	27.0	92.5	269.1	180.5	450.6	24.6	15.3	184.9
New Jersey.....	20	11	3.3	20.7	2.2	4.5	12.0	34.7	25.6	60.3	1.0	4.5	36.9
Pennsylvania.....	28	24	9.0	60.2	6.4	13.2	37.7	127.7	63.7	193.3	6.0	6.7	92.4
East North Central....	152	104	47.6	343.8	36.0	71.6	231.0	581.8	382.0	967.3	42.5	43.8	453.1
Ohio.....	43	33	23.3	179.2	17.5	35.5	121.5	296.4	191.4	493.7	22.1	21.5	236.2
Illinois.....	39	25	4.0	22.7	3.2	5.8	15.3	42.3	28.6	69.8	3.6	3.7	31.9
Wisconsin.....	26	16	6.4	50.2	4.2	8.4	28.6	86.6	54.4	136.3	(D)	6.7	64.3
West North Central....	22	18	7.5	53.0	5.7	12.0	36.8	90.4	69.2	156.4	7.6	7.2	62.1
South Atlantic.....	22	16	5.2	25.8	3.9	8.5	16.2	46.5	25.6	72.3	2.1	3.2	23.1
Virginia.....	8	7	1.5	7.7	1.1	2.6	4.6	14.4	9.7	24.6	0.4	0.8	6.2
East South Central....	16	14	6.5	29.0	5.9	11.7	23.9	73.7	60.0	130.9	(D)	2.4	29.4
West South Central....	19	13	3.9	18.5	3.6	7.2	15.0	46.6	44.9	92.0	(D)	2.9	30.9
Texas.....	6	1	0.1	0.4	0.1	0.1	0.3	0.7	0.4	1.0	(Z)	(D)	(D)
West.....	70	32	6.3	42.7	4.2	8.6	26.5	88.7	63.0	147.9	3.2	5.2	50.5
California.....	59	29	5.4	38.4	3.6	7.3	23.6	79.0	59.0	134.2	(D)	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.

TABLE 3. Value of Shipments by All Producers: 1967 and 1963

(Includes value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Value (million dollars)	
		1967	1963
3621- --	MOTORS AND GENERATORS, TOTAL.....	2,304.3	1,578.2
36211 --	Fractional horsepower motors (excluding hermetics):		
	As reported in the census of manufactures.....	831.9	620.3
	As reported on census annual form MA-36H.....	809.2	592.4
36212 --	Integral horsepower motors and generators, other than for land transportation equipment (excluding hermetics):		
	As reported on the census of manufactures MC36C.....	567.5	380.2
	As reported on census annual form MA-36H <sup>1</sup> .....	577.4	363.5
36213 --	Land transportation motors, generators, and control equipment, and parts and supplies:		
	As reported in the census of manufactures.....	119.0	89.8
	As reported on census annual form MA-36H <sup>1</sup> .....	<sup>2</sup> 124.3	89.5
36214 --	Prime mover generator sets, except steam or hydraulic turbine:		
	As reported in the census of manufactures.....	232.7	104.6
	As reported on census annual form MA-36H <sup>1</sup> .....	242.1	102.7
36215 --	Motor generator sets and other rotating equipment:		
	As reported in census of manufactures.....	357.8	246.2
	As reported on census annual form MA-36H <sup>1</sup> .....	336.5	239.1
36216 11	Parts and supplies for motors, generators, and motor-generator sets, except for land transportation equipment.....	159.3	127.6
36210 00	Motors, generators and generator sets, n.s.k. (For establishments with 10 or more employees. See Note.).....	33.3	9.4
36210 02	Motors, generators and generator sets, n.s.k. (For establishment with less than 10 employees. See Note.).....	2.8	

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind.

<sup>1</sup>Detailed product data are available in Current Industrial Reports Series MA-36H, Motors and Generators.

<sup>2</sup>Includes revisions in Current Industrial Reports Series for product code 3621398 "Other electrical apparatus for land transportation equipment" to \$39.9 million.

## 1967 CENSUS OF MANUFACTURES

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3621.--MOTORS AND GENERATORS					
	Materials, parts, supplies, and containers, total.....		(X)	905.0	(X)	662.1
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	82.2	17.2	99.6	21.6
331012	Sheet and strip.....	...do.....	590.1	103.9	546.8	95.6
331013	Plates.....	...do.....	60.3	9.8	55.4	8.5
331017	Wire and wire products.....	...do.....	(NA)	2.3	13.9	3.5
331019	All other carbon steel mill shapes and forms.....	...do.....	24.2	6.3	22.2	5.5
331020	Alloy steel (except stainless).....	...do.....	51.6	14.9	12.9	6.7
331031	Stainless steel.....	...do.....	2.1	3.0	4.2	4.5
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction only).....	million lbs.....	69.3	49.5	25.3	15.5
335790	Insulated wire and cable.....	million lbs. (copper content)	85.3	68.9	113.6	65.6
335102	Rod, bar, and mechanical wire (including extruded and or/ drawn shapes).....	million lbs.....	36.0	20.7	70.3	28.2
335123	Plate, sheet, and strip (including military cups discs).....	...do.....	4.0	3.5	5.8	3.2
335127	Pipe and tube.....	...do.....	(NA)	0.2	0.4	0.4
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate and foil.....	...do.....	3.3	1.6	1.5	1.0
335205	Extruded shapes (including extruded rod, bar, pipe, tube, etc.).....	...do.....	20.4	6.5	4.3	1.9
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder welded tubing).....	...do.....			12.7	3.6
	Primary metals:					
333122	Copper and copper-base alloy refinery shapes.....	1,000 short tons.	(D)	(D)	0.6	0.6
333401	Aluminum and aluminum-base alloy refinery shapes.....	...do.....	19.7	11.0	13.9	6.0
	Castings (rough and semifinished): <sup>1</sup>					
332011	Iron (gray and malleable).....	...do.....	85.6	33.9	92.0	29.5
332300	Steel.....	...do.....	4.5	3.5	4.0	3.1
336100	Aluminum and aluminum-base alloy.....	million lbs.....	21.0	12.6	20.9	14.4
336200	Copper and copper-base alloy.....	...do.....	3.2	2.6	2.4	2.2
339100	Iron and steel forgings <sup>1</sup> .....	1,000 short tons.	4.9	3.3	6.9	4.0
	Engines: <sup>1</sup>					
351920	Diesel and semidiesel.....	1,000.....	5.6	17.7	2.7	5.1
351901	Gasoline and other carburetor.....	...do.....	(D)	(D)	7.4	2.9
362120	Integral horsepower electric motors and generators (1 hp. and over) <sup>1</sup> .....	...do.....	38.3	10.9	10.0	6.1
	Bearings:					
356218	Ball.....	.....	(X)	20.7	(X)	19.0
356201	Roller.....	.....	(X)	1.6	(X)	1.8
367010	Electron tubes, except X-ray <sup>1</sup> .....	million units....	(D)	(D)	0.2	1.6
367408	Solid state semiconductors <sup>1</sup> .....	...do.....	1.7	4.5	1.1	2.1
970099	All other materials, components, parts, containers, and supplies consumed.....	.....	(X)	395.3	(X)	264.7
976000	Materials, parts, supplies, and containers, n.s.k. <sup>2</sup> .....	.....	(X)	79.1	(X)	33.6

(D) Include with material code 970099 "all other materials, components, parts, containers, and supplies consumed" in order to avoid disclosing figures for individual companies. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>No data are available on the quantities of castings, iron and steel forgings, engines, integral horsepower electric motors and generators, electron tubes or solid state semiconductors produced and consumed in the same establishment.

<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3621, these small establishments accounted for approximately 0.1 percent of payrolls and 0.1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

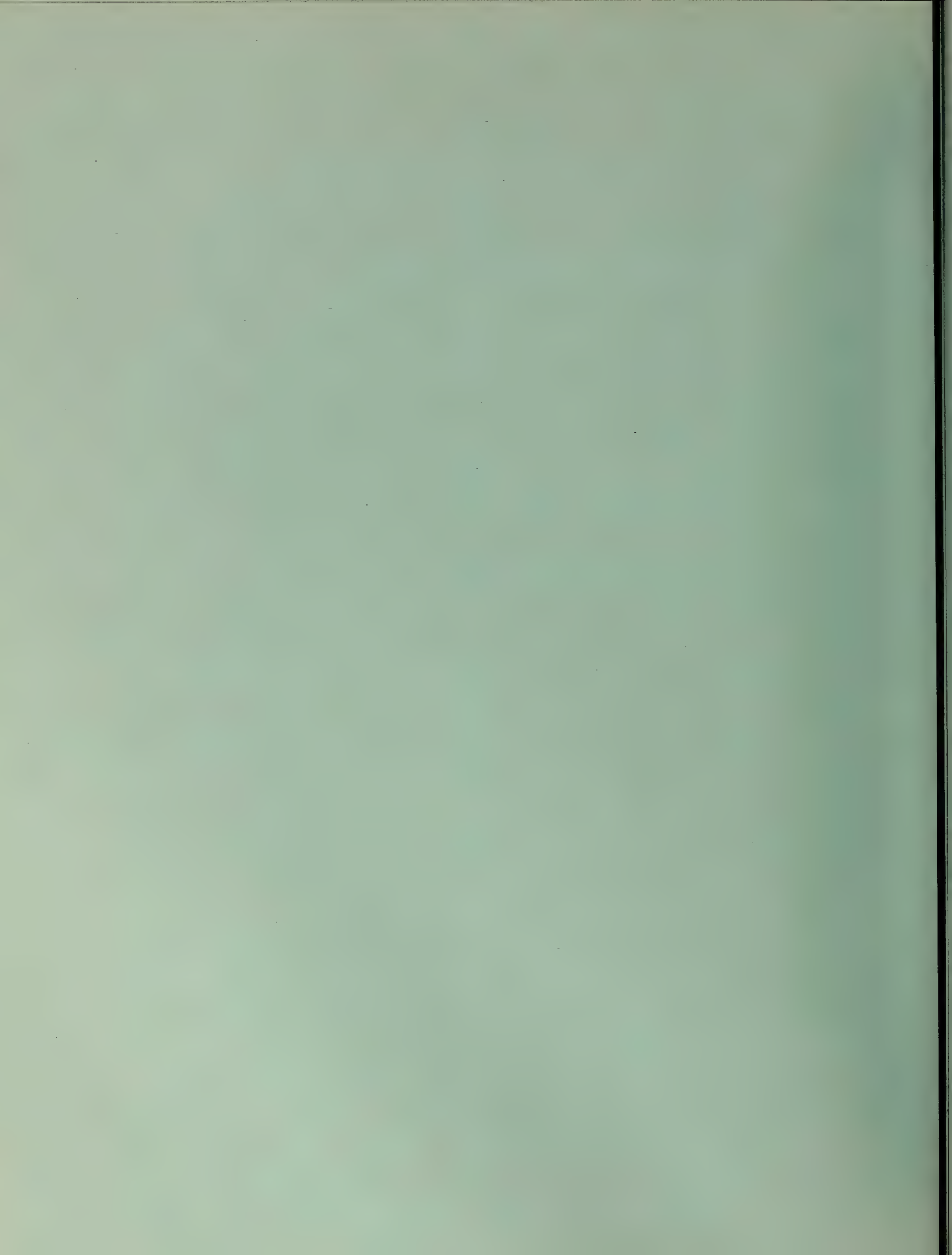
As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



## Appendix

### EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--** All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the month specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--** This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--** This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--** The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--** In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--** The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

**U.S. DEPARTMENT OF COMMERCE**  
**Bureau of the Census**  
Washington, D.C. 20233

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# 1967 CENSUS OF MANUFACTURES



MC67(P)-36A-5

## INDUSTRY SERIES

### Industrial controls

SIC Code 3622

**preliminary  
report**

The Industrial Controls Industry includes establishments primarily engaged in manufacturing motor starters and controllers, control accessories, electronic controls, and other industrial controls. Establishments primarily engaged in manufacturing automatic temperature controls are classified in industry 3822.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Industrial Controls Industry amounted to \$1,106.1 million, an increase of 71 percent

compared with 1963. Value added by manufacture at \$722.8 million in 1967 was 60 percent more than value added in 1963. Average employment in the industry showed an increase of 54 percent from 1963 to a total of 50.9 thousand employees in 1967.

Of the \$1,106.1 million total value of shipments and other receipts of establishments classified as industrial controls, \$190.1 million were products primary to other industries; and \$41.7 million were receipts for miscellaneous activities. The industry shipments of primary products represented 82 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 79 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total	With 20 employees or more (number)	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)							
	INDUSTRY 3622.--INDUSTRIAL CONTROLS													
1967 Census....	477	170	50.9	354.7	35.0	70.0	211.7	722.8	390.1	1,106.1	34.9	227.5	82	83
1966 ASM <sup>1</sup> .....	(NA)	(NA)	45.9	325.1	31.5	66.0	195.7	718.5	368.3	1,049.0	31.9	221.5	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	39.4	268.8	26.8	55.5	162.6	582.6	284.9	846.3	22.6	166.0	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	34.9	235.2	24.2	48.0	139.2	502.8	246.2	732.5	19.4	142.5	(NA)	(NA)
1963 Census....	427	118	33.0	214.6	22.8	44.9	125.4	450.5	207.6	648.7	15.4	118.9	79	79
1962 ASM <sup>1</sup> .....	(NA)	(NA)	32.9	205.3	21.8	43.9	117.8	414.8	186.5	593.3	16.3	105.3	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	31.6	192.3	20.3	40.3	106.0	388.2	171.1	548.3	17.7	93.5	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	30.5	179.0	20.0	39.5	101.4	373.2	162.7	532.4	18.4	90.3	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	28.2	165.6	19.2	38.7	97.9	349.8	153.0	496.7	9.8	80.0	(NA)	(NA)
1958 Census <sup>2</sup> ...	216	75	27.1	145.3	17.3	33.7	81.8	281.9	125.0	413.2	7.6	70.1	79	70

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 2 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

**BUREAU OF THE CENSUS** George Hay Brown, Director

The total value of industrial controls shipped by all producers in 1967 was \$1,055.4 million of which \$874.3 million, or 83 percent, were shipped by plants classified in industry 3622, Industrial Controls, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 79 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3622, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-36A, Switchgear, Switchboard Apparatus, Relays, and Industrial Controls.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
INDUSTRY 3622 --INDUSTRIAL CONTROLS													
United States, total.....	477	170	50.9	354.7	35.0	70.0	211.7	722.8	390.1	1,106.1	34.9	33.0	450.5
New England.....	52	22	4.9	30.4	3.3	6.8	17.9	59.9	32.5	91.2	3.5	2.0	23.0
Massachusetts.....	22	10	3.5	20.1	2.4	4.9	12.8	38.5	21.7	60.1	(D)	1.0	10.6
Middle Atlantic.....	95	35	6.1	44.1	4.0	8.2	23.3	71.3	51.2	121.3	3.7	2.9	37.7
Pennsylvania.....	25	13	1.5	11.2	0.9	1.8	4.6	18.3	15.8	33.0	1.8	0.6	8.7
East North Central....	145	64	24.2	171.5	16.9	33.7	108.8	362.2	183.7	545.0	21.6	20.6	297.5
Ohio.....	34	10	2.5	19.2	1.5	3.0	9.9	35.5	21.4	56.9	(D)	2.4	30.2
Illinois.....	46	25	4.9	31.9	3.3	6.4	16.6	71.8	57.6	129.5	3.5	3.4	55.6
Wisconsin.....	19	11	14.2	103.1	10.5	21.2	73.6	220.1	84.6	303.1	(D)	12.6	191.5
West North Central....	18	5	0.8	5.7	0.6	1.2	3.3	10.4	9.5	18.6	0.1	1.0	9.1
South.....	63	22	10.8	71.1	7.7	14.9	42.3	168.0	75.1	241.3	3.8	5.3	67.7
Texas.....	27	7	0.7	4.5	0.4	0.8	2.4	7.8	7.8	15.9	0.2	(D)	(D)
West.....	104	22	4.1	32.0	2.5	5.3	16.1	50.9	38.1	88.6	2.1	1.2	15.6
Washington.....	6	2	0.1	0.8	0.1	0.2	0.5	1.0	0.9	1.9	(D)	(D)	(D)
California.....	76	19	3.7	29.7	2.3	4.9	14.9	47.0	34.9	81.6	1.5	1.0	13.1

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.



TABLE 3. Value of Shipments by All Producers: 1967 and 1963

(Includes value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Value of shipments including interplant transfers (million dollars)	
		1967	1963
36220- --	INDUSTRIAL CONTROLS, TOTAL.....	1,055.4	633.3
	Industrial control:		
	As reported in the Census of manufacturers.....	1,055.4	633.3
	As reported in the Census annual Form MA-36A.....	956.5	616.3
	General industry devices:		
36220 12	A.c. full voltage starters 600 volts or less, excluding controls for packaged adjustable speed drives and synchronous motor starters.....	106.7	81.9
36220 13	A.c. contractors, 600 volts or less, excluding controls for packaged adjustable speed drives and synchronous motor field control.....	22.1	16.2
36220 14	A.c. reduced voltage controls, 600 volts or less.....	43.9	21.7
36220 16	Motor control centers, 600 volts or less.....	73.7	50.5
36220 18	Starters and contactors for squirrel cage and wound rotor and synchronous Motors, over 600 volts, air break and oil immersed.....	28.2	14.2
36220 19	D.c. general purpose controls.....	8.9	4.8
36220 41	Resistance welding controls, electronic and magnetic.....	8.5	8.2
36220 43	Pilot circuit devices, such as limit switches, interval timers, etc. (excluding relays).....	90.0	69.9
36220 44	Pushbuttons and pushbutton stations but excluding operators' desks and stations.....	44.8	28.5
36220 81	Rheostats and resistors (except for electronic applications) sold separately, n.e.c.....	<sup>1</sup> 12.0	<sup>1</sup> 12.1
	Specific application controllers, including all systems:		
36220 45	Marine and Navy auxiliary controls and accessories.....	26.7	20.6
	Controls, constant and adjustable voltage, including all operators' desks and stations:		
36220 47	Metal mill.....	50.3	29.8
36220 48	Crane and hoist.....	18.6	12.4
36220 49	Metal mill, crane, and hoist accessories, sold separately.....	3.7	2.4
36220 74	Other specific special purpose a.c. and d.c. controllers, such as nonmetal mill and air-conditioning; specially engineered control assemblies; and all other controllers, n.e.c., whether magnetic or static.....	207.7	120.1
36220 96	Controls for packaged adjustable speed drives, including electronic and nonelectronic and operators' desks and stations.....	61.9	29.0
36220 98	All other general industry devices (including brakes and low voltage synchronous motor starters.....	80.6	44.8
36220 99	Renewal parts for industrial control equipment.....	68.4	49.2

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.e.c. Not elsewhere classified.

<sup>1</sup>Quantity reported for 1967 and 1963 were as follows: 94 million and 89 million.

## 1967 CENSUS OF MANUFACTURES

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3622.--INDUSTRIAL CONTROLS					
	Materials, parts, containers, and supplies, total.....		(X)	361.6	(X)	1,955
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1000 tons.....	4.2	1.2	8.7	1.8
331012	Sheet and strip.....	..do.....	33.3	6.6	29.8	5.6
331013	Plates.....	..do.....	2.7	0.4	1.1	0.2
331015	Structural shapes.....	..do.....	2.9	0.5	2.5	0.6
331019	All other carbon steel mill shapes and forms.....	..do.....	1.2	0.4	3.1	0.7
331020	Alloy steel (except stainless).....	..do.....	15.3	4.0	1.7	0.5
331031	Stainless steel.....	..do.....	1.7	2.1	1.3	1.9
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction only).....	Million lbs.....	3.4	2.7	3.2	1.5
335790	Insulated wire and cable.....	Million lbs..... (copper content)	(NA)	5.6	5.4	3.8
335102	Rod, bar, and mechanical wire (including extruded and/or drawn shapes).....	Million lbs.....	4.2	2.8	4.1	2.4
335123	Plate, sheet, and strip (including military cups and discs)....	..do.....	3.1	2.6	4.0	2.5
335127	Pipe and tube.....	..do.....	0.5	0.5	0.4	0.2
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	..do.....	0.9	0.5	0.6	0.4
335205	Extruded shapes (including extruded rod, bar, pipe tube, etc.)	..do.....			0.4	0.2
335209	All other aluminum mill shapes and forms (wire, rolled rod, and bar).....	..do.....	0.9	0.5	0.4	0.2
	Castings (rough and semifinished):					
332300	Steel.....	1000 tons.....	5.2	3.6	3.1	2.2
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	5.2	1.9	2.6	1.1
336200	Copper and copper-base alloy.....	..do.....	1.5	1.1	1.0	0.8
	Industrial electrical control equipment:					
362200	Purchased from other companies.....		(X)	<sup>1</sup> 52.0	(X)	<sup>1</sup> 30.7
362209	Received from other plants of your company.....		(X)	<sup>1</sup> 47.8	(X)	16.7
282130	Thermoplastic resins.....	Million lbs.....	1.9	0.9	0.5	0.3
282140	Thermosetting resins.....	..do.....	(NA)	2.2	8.7	1.8
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	162.8	(X)	92.3
976000	Materials, containers, supplies, n.s.k. <sup>2</sup> .....		(X)	59.3	(X)	26.9

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>An indeterminate amount of material other than industrial electrical equipment are included.<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3622, these small establishments accounted for less than 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

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# 1967 CENSUS OF MANUFACTURES

M/C67(P)-36A-6

## INDUSTRY SERIES

### Welding apparatus

SIC Code 3623

preliminary  
report

The Welding Apparatus Industry includes establishments primarily engaged in manufacturing welding apparatus and accessories. Establishments primarily engaged in coating welding wire from purchased wire or from wire drawn in the same establishment are also included. Establishments primarily engaged in manufacturing gas welding apparatus are classified in industry 3548, and laser, electron beam, and ultrasonic welding machines and equipment in industry 3662.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Welding Apparatus Industry amounted to \$485.4 million, an increase of 47 percent compared with 1963. Value added by manufacture at \$258.3 million in 1967 was 59 percent more than value added in 1963. Average employment in the industry showed an increase of 46 percent from 1963 to a total of 14.0 thousand employees in 1967.

Of the \$485.4 million total value of shipments and other receipts of establishments classified as welding apparatus, \$28.6 million were products primary to other industries; and \$46.4 million

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
INDUSTRY 3623.--WELDING APPARATUS														
1967 Census....	149	94	14.0	120.7	9.6	20.2	74.5	258.3	237.4	485.4	18.2	99.9	93	94
1966 ASM <sup>1</sup> .....	(NA)	(NA)	14.4	116.4	10.1	21.7	73.4	264.5	282.5	533.8	9.9	102.8	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	12.6	103.5	8.5	19.5	62.8	210.8	238.4	446.5	11.1	80.9	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	11.4	91.9	7.8	18.1	57.8	192.6	201.4	389.4	6.8	71.5	(NA)	(NA)
1963 Census....	149	75	9.6	72.1	6.6	14.1	44.6	162.4	168.6	330.2	5.4	56.7	93	89
1962 ASM <sup>1</sup> .....	(NA)	(NA)	10.1	75.2	6.5	13.8	40.8	135.5	171.7	308.6	4.7	62.5	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	10.7	73.3	6.9	13.8	38.9	129.5	163.4	294.4	*7.5	61.6	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	11.0	75.9	7.3	14.5	40.6	136.5	165.6	304.2	4.5	60.0	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	10.2	70.1	6.9	14.3	40.0	133.5	164.7	297.4	3.8	59.8	(NA)	(NA)
1958 Census <sup>2</sup> ....	135	70	9.9	60.8	6.4	12.7	33.0	112.7	135.2	247.7	4.3	51.7	93	92

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 4 and 2, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director

were receipts for miscellaneous activities. The industry shipments of primary products represented 93 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was also 93 percent in 1963.

The total value of welding apparatus shipped by all producers in 1967 was \$434.4 million of which \$410.4 million, or 94 percent, were shipped by plants classified in industry 3623, Welding Apparatus, while the remainder was shipped by

plants classified in other industries. This percent, called the coverage ratio, was 89 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
	INDUSTRY 3623.--WELDING APPARATUS												
United States, total.....	149	94	14.0	120.7	9.6	20.2	74.5	258.3	237.4	485.4	18.2	9.6	162.4
New England.....	8	5	0.3	2.1	0.2	0.4	1.3	3.5	2.9	6.1	0.2	(D)	(D)
Middle Atlantic.....	32	18	1.9	14.3	1.2	2.5	7.7	48.1	49.4	93.9	1.4	(D)	(D)
Pennsylvania.....	16	11	1.3	9.2	0.8	1.7	5.4	28.0	33.9	58.3	(D)	1.1	20.8
East North Central...	66	46	9.1	85.2	6.5	13.8	54.9	163.2	133.6	293.4	7.7	6.4	105.2
Illinois.....	10	5	0.9	7.8	0.5	1.1	3.8	12.9	6.5	19.1	0.3	(D)	(D)
Michigan.....	34	26	2.5	22.2	1.8	4.0	14.5	36.0	30.0	65.6	0.8	1.8	23.3
West North Central...	11	6	0.5	3.7	0.4	0.8	2.1	7.0	9.8	16.8	0.2	0.3	4.1

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (\$1,000)	Quantity	Value (\$1,000)
3623- --	WELDING APPARATUS, TOTAL.....		(X)	434.4	(X)	324.9
36231 --	Arc welding machines, components, and accessories, except electrodes.....		(X)	141.9	(X)	104.5
	Arc welding machines:					
	Alternating current transformer arc welders:					
36231 11	180 amps. and below.....	1,000 units...	58.5	4.4	72.5	7.8
36231 15	Over 180 amps.....	..do.....	96.0	14.0	55.1	9.5
	Direct current arc welders:					
36231 31	Generators only.....	..do.....	40.6	27.7	7.8	3.9
36231 32	Rectifier types, including a.c.-d.c.....	..do.....			16.1	12.6
	Complete units only:					
36231 33	Engine driven.....	..do.....	43.4	34.9	34.6	30.5
36231 35	Motor driven.....	..do.....				
36231 98	Accessories for arc welding machinery (including electrode holders, ground clamps, arc torches, automatic welding heads, semiautomatic welding guns, standard positioners, etc.; excluding welding rods).....		(X)	46.3	(X)	36.5
36231 00	Arc welding machines, components, and accessories, n.s.k.....		(X)	14.6	(X)	3.7
36232 --	Arc welding electrodes, metal.....		(X)	171.5	(X)	148.3
	Covered electrodes:					
36232 11	Mild steel.....	million lbs...	590.5	80.6	465.1	68.8
36232 23	Low alloy steel, except hard surfacing.....	..do.....	50.4	10.2	42.8	12.9
36232 25	Stainless steel (chromium 4 percent or more).....	..do.....	30.1	22.0	13.8	17.8
36232 31	Nonferrous, except hard surfacing.....	..do.....	3.8	12.6	9.5	10.3
36232 41	Hard surfacing, all types (including tool steel).....	..do.....	22.2	11.7	15.1	15.9
36232 53	Coiled, spooled, straightened cut and flux cored, all metals, for automatic arc welding and inert gas shielded arc welding (including electrodes for submerged arc welding bare wire).....	..do.....	77.1	34.1	98.6	22.5
36232 00	Metal arc welding electrodes, n.s.k.....		(X)	0.3	(X)	0.2
36233 --	Resistance welders, components, accessories and electrodes.....		(X)	88.0	(X)	68.3
36233 13	Spot and projection welders--single electrode, including gun types.....	1,000 units...	4.9	13.7	8.9	23.8
36233 23	Spot and projection welders--multi-electrode, including gun types.....	..do.....	1.0	15.3		
36233 31	Seam welders.....	..do.....	0.3	3.2	0.2	4.2
36233 41	Flash, upset and butt welders.....	..do.....	1.6	5.0	0.9	3.0
36233 51	Other resistance welders.....		(X)	22.3	(X)	15.4
36233 61	Resistance welder transformers (sold separately).....	1,000 units...	6.8	3.1	7.8	2.3
36233 71	Resistance welder electrodes.....	million lbs...	2.5	4.4	1.7	4.3
36233 81	Resistance welder accessories, including electrode holders, etc.		(X)	10.7	(X)	12.4
36233 00	Resistance welders, components, accessories and electrodes, n.s.k.		(X)	10.3	(X)	2.9
36230 00	Welding apparatus, n.s.k. (Represents principally establishments with 10 or more employees in 1967. See Note.).....		(X)	30.9	(X)	3.8
36230 02	Welding apparatus, n.s.k. (Represents principally establishments with fewer than 10 employees in 1967. See Note.).....		(X)	2.1		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind. (X) Not applicable.



## 1967 CENSUS OF MANUFACTURES

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3623.--WELDING APPARATUS					
	Materials, parts, containers, and supplies, total.....		(X)	200.2	(X)	150.5
	Mill shapes and forms, except castings:					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	8.9	1.9	10.0	2.4
331012	Sheet and strip.....	..do.....	55.0	9.4	22.8	5.0
331015	Structural shapes.....	..do.....	4.3	0.7	2.2	0.6
331017	Wire and wire products.....	..do.....	182.4	30.6	236.2	36.2
331019	All other carbon steel mill shapes and forms.....	..do.....	28.1	4.1	13.9	2.8
331020	Alloy steel, except stainless.....	..do.....	14.4	6.4	6.2	4.6
331031	Stainless steel.....	..do.....	4.6	6.7	8.8	12.7
	Copper and copper-base alloy:					
335728	Bare wire (For electrical conduction only).....	million pounds...	3.1	2.2	1.4	0.8
335790	Insulated wire and cable.....	..do.....	9.1	7.4	6.4	4.2
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	..do.....	4.0	4.3	4.9	3.7
335123	Plate, sheet and strip, including military cups and discs....	..do.....	1.4	1.5	0.7	0.5
335127	Pipe and tube.....	..do.....	1.0	0.8	0.3	0.2
336200	Copper and copper-base alloy castings <sup>1</sup> .....	..do.....	3.1	3.3	2.2	2.1
970099	All other materials, components, parts, containers and supplies consumed.....		(X)	97.1	(X)	64.2
976000	Materials, containers, supplies, n.s.k. <sup>2</sup> .....		(X)	23.8	(X)	10.4

n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>No data are available on the quantities of copper and copper-base alloy castings produced and consumed in the same establishment.<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3623, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

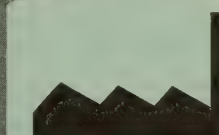
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-36A-7

## INDUSTRY SERIES

**preliminary  
report**

### Carbon and graphite products

SIC Code 3624

The Carbon and Graphite Products Industry includes establishments primarily engaged in manufacturing lighting carbons; carbon, graphite, and metal-graphite brushes and brush stock; carbon or graphite electrodes for thermal and electrolytic uses; and other carbon, graphite, and metal-graphite products.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Carbon and Graphite Products Industry amounted to \$296.4 million, an increase of 31 percent compared with 1963. Value added by

manufacture at \$186.3 million in 1967 was 32 percent more than value added in 1963. Average employment in the industry showed an increase of 18 percent from 1963 to a total of 11.9 thousand employees in 1967.

Of the \$296.4 million total value of shipments and other receipts of establishments classified as carbon and graphite products, \$7.7 million were products primary to other industries; and \$1.7 million were receipts for miscellaneous activities. The industry shipments of primary products represented 97 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 93 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)
INDUSTRY 3624.—CARBON AND GRAPHITE PRODUCTS														
1967 Census....	65	42	11.9	82.8	9.1	18.5	57.8	186.3	117.8	296.4	41.3	69.4	97	96
1966 ASM <sup>1</sup> .....	(NA)	(NA)	10.8	73.9	8.4	17.0	51.7	175.1	112.1	283.2	21.0	61.0	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	10.3	68.3	8.0	16.5	48.6	168.0	100.9	267.2	15.5	57.7	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	10.9	70.0	8.3	16.9	48.8	152.5	96.0	245.2	12.5	53.8	(NA)	(NA)
1963 Census....	53	40	10.0	62.0	8.0	16.1	44.1	141.4	84.8	226.9	11.4	50.2	93	96
1962 ASM <sup>1</sup> .....	(NA)	(NA)	9.7	56.5	7.3	14.6	38.0	128.4	70.1	196.5	10.9	43.0	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	9.2	52.3	6.9	13.5	34.9	113.9	66.3	182.9	5.5	40.9	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	9.6	52.8	7.3	14.1	35.8	120.8	66.7	184.1	7.0	43.9	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	9.9	53.6	7.7	15.4	37.4	118.1	70.2	193.1	*5.8	42.4	(NA)	(NA)
1958 Census <sup>2</sup> ...	46	35	8.9	45.6	6.6	13.0	30.6	102.5	59.0	154.9	11.1	46.9	97	95

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 2 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director



The total value of carbon and graphite products shipped by all producers in 1967 was \$300.0 million of which \$287.0 million, or 96 percent, were shipped by plants classified in industry 3624, Carbon and Graphite Products, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was also 96 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

## TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(Geographic data for this industry will not be published separately)

TABLE 3. Value of Shipments by All Producers: 1967 and 1963

(Includes value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Value of shipments including interplant transfers (million dollars)	
		1967	1963
3624- --	CARBON AND GRAPHITE PRODUCTS, TOTAL.....	300.0	217.8
	Carbon and graphite products:		
	Contacts, and brush plates:		
36240 11	Automotive (starter and generator) brushes, including replacement brushes (automotive and light truck type - 6 to 12 volts, inclusive) and those that are coded (excluding automobile accessory brushes).....	12.2	11.4
36240 12	Other fractional horsepower brushes and contacts, including replacement brushes (brushes 1/4 square inch or less in cross section or 1-1/2 inches long or less but larger than a miniature brush) and automobile accessory brushes.....	6.5	7.2
36240 14	Miniature brushes (brushes having a cross-sectional area of less than 1/64 square inch with the thickness and width thereof less than 1/8 inch or, in the case of a cylindrical brush, a diameter less than 1/8 inch).....	0.4	
36240 15	Other industrial brushes and contacts (brushes over 1/4 square inch in cross section and over 1-1/2 inches long).....	14.2	18.8
36240 17	Brush plates.....	4.2	1.9
	Electrodes:		
	Electrodes for electric furnaces and electrolytic cell use, including paste for self-bake electrodes:		
36240 52	Carbon.....	147.6	25.2
36240 56	Graphite.....		78.4
	All other carbon and graphite products:		
36240 81	For electrical uses, including welding products--rods, plates, paste brazing and soldering tips; illuminating carbons; pile and rheostat resistance discs, plugs, plates and rods; power tube and rectifier parts and plates or rods; spectroscopic products; battery; electronic graphite; telephone components; resistance elements; etc. (excluding silver or other metal contacts).....	33.1	26.0
36240 83	For mechanical uses, including one-piece seals, bushings and bearings, packing rings for steam seal, rotor vanes, etc. (excluding metallic oilless bearings).....	23.2	11.7
36240 86	For aerospace uses, including unmachined stock and machined items.....	55.8	36.0
36240 87	For nuclear uses, including unmachined stock and machined parts for use in nuclear reactor and/or in processing nuclear materials.....		
36240 89	For all other uses, including chemical, metallurgical, refractory, etc.....		
36240 00	Carbon and graphite products, n.s.k. (represents principally establishments with 10 employees or more in 1967. See Note.).....	2.3	1.2
36240 02	Carbon and graphite products, n.s.k. (represents principally establishments with fewer than 10 employees in 1967. See Note.).....	0.5	

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3624.--CARBON AND GRAPHITE PRODUCTS					
	Materials, parts, containers, and supplies, total.....		(X)	100.9	(X)	71.4
	Mill shapes and forms (except castings):					
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction only).....	Million lbs.....	0.9	1.0	0.7	0.6
335790	Insulated wire and cable.....	Million lbs. (copper content)	(D)	(D)	(Z)	(Z)
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	(D)	(D)	(D)	(D)
335123	Plate, sheet and strip, including military cups and discs....	do.....	0.5	0.4	0.3	0.2
335127	Pipe and tube.....	do.....	(D)	(D)	(D)	(D)
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate and foil.....	do.....	}	(Z)	(NA)	(NA)
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.	do.....				
335209	All other aluminum mill shapes and forms wire, rolled rod and bar, powder, welded tubing, etc.....	do.....				
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	189.6	(X)	67.5
976000	Materials, parts, containers, and supplies consumed, n.s.k. <sup>2</sup> .....		(X)	9.9	(X)	3.1

(D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or from related figures. (NA) Not available. n.s.k. Not specified by kind.

(X) Not applicable. (Z) Less than 0.1 when rounded.

<sup>1</sup>Includes the cost of materials for which the symbol (D) appears.

<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3624, these small establishments accounted for less than 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



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**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

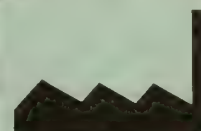
**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# 1967 CENSUS OF MANUFACTURES



MC67(P)-36A-8

## INDUSTRY SERIES

**preliminary  
report**

### Electrical industrial apparatus, n.e.c.

SIC Code 3629

The Electrical Industrial Apparatus, Not Elsewhere Classified, Industry includes establishments primarily engaged in manufacturing industrial and commercial electric apparatus and equipment, not elsewhere classified, such as blasting machines, and fixed and variable capacitors, condensers, and rectifiers for industrial applications. Establishments primarily engaged in manufacturing fixed and variable capacitors and condensers for electronic end products are classified in industry 3679, and rectifiers for electronic end products in industries 3674 and 3679.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Electrical Industrial Apparatus, N.E.C., Industry amounted to \$379.0 million, an increase of 59 percent compared with 1963. Value added by manufacture at \$218.8 million in 1967 was 55 percent more than value added in 1963. Average employment in the industry showed an increase of 51 percent from 1963 to a total of 21.1 thousand employees in 1967.

Of the \$379.0 million total value of shipments and other receipts of establishments classified as electrical industrial apparatus, n.e.c., \$65.4 million were products primary to other industries; and \$23.6 million were receipts for miscellaneous activities. The industry shipments of primary products represented 82 percent of the total

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3629. --ELECTRICAL INDUSTRIAL APPARATUS, N.E.C.														
1967 Census....	220	124	21.1	119.1	16.6	32.0	80.1	218.8	162.8	379.0	12.1	81.3	82	73
1966 ASM <sup>1</sup> .....	(NA)	(NA)	20.5	112.8	16.4	31.6	76.0	212.1	164.0	369.4	13.8	72.1	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	16.3	87.8	12.6	25.4	57.3	154.7	134.7	288.2	8.0	51.2	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	14.5	76.0	11.2	21.8	49.3	134.5	103.8	242.8	4.2	40.9	(NA)	(NA)
1963 Census....	231	109	14.0	73.0	10.9	21.0	47.7	141.6	100.1	238.3	4.0	42.9	80	72
1962 ASM <sup>1</sup> .....	(NA)	(NA)	20.6	92.3	15.6	30.0	58.0	159.0	112.5	270.8	6.7	48.5	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	18.1	79.9	13.7	25.9	50.7	142.8	94.8	236.3	7.2	41.0	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	19.9	91.0	15.3	28.5	55.7	149.9	112.0	261.4	8.2	44.8	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	20.0	95.2	15.2	30.0	59.1	169.1	116.0	282.1	7.8	52.5	(NA)	(NA)
1958 Census <sup>2</sup> ...	286	111	16.8	78.6	11.9	23.6	47.0	137.5	93.1	228.9	8.5	45.5	71	73

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 4 and 3, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary****Rocco C. Siciliano, Under Secretary****BUREAU OF THE CENSUS George Hay Brown, Director**

manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 80 percent in 1963.

The total value of electrical industrial apparatus, n.e.c., shipped by all producers in 1967 was \$394.6 million of which \$290.0 million, or 73 percent, were shipped by plants classified in industry 3629, Electrical Industrial Apparatus, N.E.C., while the remainder was shipped by

plants classified in other industries. This percent, called the coverage ratio, was 72 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3629.--ELECTRICAL INDUSTRIAL APPARATUS, N.E.C.												
United States, total.....	220	124	21.1	119.1	16.6	32.0	80.1	218.8	162.8	379.0	12.1	14.0	141.6
Northeast:													
Massachusetts.....	6	6	2.8	11.1	2.4	4.2	8.3	19.2	13.7	33.0	(D)	0.2	1.5
Connecticut.....	8	3	0.3	1.5	0.3	0.5	1.1	2.0	1.1	3.1	0.1	0.3	1.6
New York.....	35	21	3.5	22.6	2.7	5.3	15.0	40.1	32.0	71.0	(D)	2.3	25.2
New Jersey.....	19	10	1.0	6.0	0.8	1.6	4.5	10.3	10.8	20.7	0.4	0.5	4.5
East North Central:													
Ohio.....	14	8	2.4	16.0	1.7	3.6	70.5	31.7	21.3	49.6	0.9	(D)	(D)
Indiana.....	11	9	2.7	13.2	2.3	4.3	9.5	27.2	19.6	47.2	1.7	(D)	(D)
West North Central....	18	11	1.1	6.3	0.8	1.6	4.0	11.2	7.9	20.4	1.2	0.5	7.2
Missouri.....	7	4	0.5	3.0	0.3	0.5	1.5	3.8	3.5	8.3	0.1	(D)	(D)
Mountain.....	5	2	0.3	1.2	0.2	0.4	0.8	1.5	1.0	2.5	0.1	(D)	(D)
Pacific.....	34	18	1.5	9.3	1.1	2.2	5.8	18.2	12.3	30.5	0.8	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.  
n.e.c. Not elsewhere classified.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3629- --	ELECTRICAL INDUSTRIAL APPARATUS, N.E.C., TOTAL.....		(X)	394.6	(X)	250.5
36291 --	Capacitors for industrial use (except for electronic applicators).....		(X)	98.6	(X)	51.4
36291 11	Power capacitors, including shunt and series capacitors and accessories.....		(X)	42.9	(X)	22.2
36291 31	A.c. capacitors (except electrolytic):					
36291 35	General purpose for motors, controls, etc.....	Million units..	15.2	32.1	6.1	14.4
36291 98	Capacitors for fluorescent lamp ballasts.....	do.....	21.7	11.3	18.4	12.1
36291 98	Other capacitors, except for electronic applications.....		(X)	12.3	(X)	2.8
36292 --	Rectifying apparatus.....		(X)	131.7	(X)	86.9
	Rectifying (power conversion) apparatus (except for electronic applications) including all apparatus using semiconductors and/or electron tubes as power conversion means:					
	Semiconductor power conversion apparatus:					
	Semiconductor battery charges:					
36292 21	Automotive.....	1,000 units....	386.3	38.2	758.6	16.4
36292 25	Industrial and railroad.....	do.....	145.9	11.4	182.3	9.6
36292 31	Semiconductor computer supplies.....		(X)	1.0	(X)	( <sup>1</sup> )
	Semiconductor high-voltage power supplies in excess of 2kv. (excluding separate associated apparatus such as controls, capacitors, switch gear, etc.):					
36292 41	100 kw. and below.....		(X)	14.0	(X)	8.5
36292 45	Above 100 kw.....		(X)		(X)	
36292 49	All other a.c. to d.c. semiconductor power conversion apparatus.....		(X)	9.1	(X)	19.1
36292 51	Power mercury arc rectifiers.....		(X)	17.3	(X)	11.0
36292 98	Other rectifying (power conversion) apparatus.....		(X)	8.6	(X)	20.7
36292 00	Rectifying apparatus, n.s.k.....		(X)	32.1	(X)	1.4
36293 --	Other electrical equipment for industrial use.....		(X)	150.3	(X)	103.7
	Coil windings, electrical:					
36293 13	Aluminum and aluminum-base alloy.....	Million units..	11.3	10.7	20.0	45.6
36293 15	Copper and copper-base alloy.....	do.....	43.3	29.1		
	Thermal generators:					
36293 23	Thermal electric.....	do.....	0.2	0.2	(X)	58.1
36293 25	Electro-chemical (fuel cells).....	do.....	(NA)	2.5		
36293 31	Solenoids (except solenoid-actuated regulating valves).....	do.....	1,036.2	18.1	(X)	8.5
36293 98	Other miscellaneous electrical equipment for industrial use, n.e.c.....		(X)	89.7		
36290 00	Electrical industrial apparatus, n.s.k. (Represents primarily establishments with 10 employees or more in 1967. See Note.).....		(X)	11.2	(X)	8.5
36290 02	Electrical industrial apparatus, n.s.k. (Represents primarily establishments with fewer than 10 employees in 1967. See Note.)..		(X)	2.8		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.e.c. Not elsewhere classified. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Data for product code 3629231 in 1963 are included with 3629251 to prevent disclosing figures for individual companies.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3629.--ELECTRICAL INDUSTRIAL APPARATUS, N.E.C.					
	Materials, parts, containers, and supplies, total.....		(X)	121.1	(X)	93.0
	Mill shapes and forms (except castings):					
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction only).....	Million lbs.....	(NA)	4.4	5.6	3.3
335790	Insulated wire and cable.....	Million lbs. (copper content)	(NA)	8.4	13.1	8.2
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	(NA)	2.7	3.7	1.4
335123	Plate, sheet and strip, including military cups and discs..	..do.....		0.1	2.1	0.4
335127	Pipe and tube.....	..do.....		0.5	0.5	0.3
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate and foil.....	..do.....	12.2	5.7	5.5	2.3
335205	Extruded shapes, including extruded rod, bar, pipe tube, etc.	..do.....	1.5	0.9	1.2	0.5
335209	All other aluminum mill shapes and forms (wire, rolled rod, and bar, powder, welded tubing, etc.).....	..do.....	0.5	0.5		
367010	Electron tubes, except x-ray.....	1,000 units.....	(D)	(D)	(NA)	(NA)
367408	Solid state semiconductors.....	..do.....	(D)	(D)	23.1	2.1
281995	Silicon, hyper pure.....	Kilograms.....	(D)	(D)	(NA)	(NA)
333977	Germanium.....	Pounds.....	(D)	(D)	(NA)	(NA)
970099	All other materials and components, parts, containers, and supplies consumed.....	.....	(X)	140.3	(X)	60.1
976000	Materials, containers, supplies, n.s.k. <sup>2</sup> .....	.....	(X)	58.1	(X)	14.3

(D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or from related figures. (NA) Not available. n.s.k. Not specified by kind.

(X) Not applicable.

<sup>1</sup>Includes cost for materials for which symbol "D" appears.

<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3629, these small establishments accounted for approximately 1 percent of payrolls and 2 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

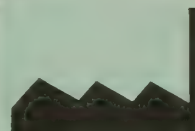
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-36B-1

## INDUSTRY SERIES

### Household cooking equipment

SIC Code 3631

preliminary  
report

The Household Cooking Equipment Industry includes establishments primarily engaged in manufacturing household cooking equipment, such as stoves, ranges, and ovens. Establishments primarily engaged in manufacturing household cooking appliances, such as hot plates, grills, percolators, and toasters are classified in industry 3634. Establishments primarily engaged in manufacturing commercial cooking equipment are classified in industry 3589.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Household Cooking Equipment Industry amounted to \$549.7 million, an increase of 16 percent compared with 1963. Value added by manufacture at \$254.0 million in 1967 was 10 percent more than value added in 1963. Average employment in the industry showed an increase of 5 percent from 1963 to a total of 20.2 thousand employees in 1967.

Of the \$549.7 million total value of shipments and other receipts of establishments classified as household cooking equipment, \$38.2 million were products primary to other industries; and \$28.7 million were receipts for miscellaneous activities. The industry shipments of primary products re-

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)							
INDUSTRY 3631.—HOUSEHOLD COOKING EQUIPMENT														
1967 Census....	73	49	20.2	127.9	15.9	32.4	88.4	254.0	291.6	549.7	8.6	107.0	93	77
1966 ASM <sup>1</sup> .....	(NA)	(NA)	20.7	129.9	16.4	32.9	91.8	253.7	305.8	548.5	10.1	112.9	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	20.8	125.2	16.4	53.2	86.6	264.0	297.6	553.6	13.2	106.2	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	19.8	117.8	15.4	30.2	76.9	233.8	265.8	500.0	9.6	87.2	(NA)	(NA)
1963 Census....	83	53	19.2	111.3	15.1	30.4	75.6	230.3	253.5	473.5	8.2	84.9	87	72
1962 ASM <sup>1</sup> .....	(NA)	(NA)	18.8	102.7	14.2	27.2	66.5	192.2	217.0	411.9	4.7	69.2	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	18.9	102.1	14.2	27.9	65.9	184.9	218.1	401.4	3.7	71.8	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	20.1	104.1	15.0	29.2	63.1	186.2	219.7	407.3	7.0	67.9	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	19.0	96.7	15.0	30.0	66.1	194.3	216.9	411.4	6.2	61.0	(NA)	(NA)
1958 Census <sup>2</sup> ...	69	55	18.2	89.2	14.1	28.2	60.3	181.1	184.9	364.9	4.0	61.4	88	72

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued September 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director

presented 93 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 87 percent in 1963.

The total value of household cooking equipment shipped by all producers in 1967 was \$624.4 million of which \$482.8 million, or 77 percent, were shipped by plants classified in industry 3631, Household Cooking Equipment, while the remain-

der was shipped by plants classified in other industries. This percent, called the coverage ratio, was 72 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3631, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-34N, Selected Heating and Cooking Equipment

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

(See appendix, "Explanation of Terms.")

Geographic area	1967										1963		
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)		
	INDUSTRY 3631.—HOUSEHOLD COOKING EQUIPMENT												
United States, total.....	73	49	20.2	127.9	15.9	32.4	88.4	254.0	291.6	549.7	8.6	19.2	230.3
Middle Atlantic.....	14	9	2.5	15.2	2.1	5.6	10.8	28.1	33.8	62.2	(d)	(d)	(d)
North Central.....	24	18	8.2	56.9	6.1	11.6	37.9	100.4	114.2	214.0	2.3	8.3	93.8
Illinois.....	14	11	5.6	37.1	4.5	8.2	27.7	59.3	76.6	136.0	1.7	5.2	57.6
South.....	20	14	8.0	45.2	6.6	13.1	32.9	106.9	123.0	233.4	4.6	5.5	79.6

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000 units)	Value (million dollars)	Quantity (1,000 units)	Value (million dollars)
3631- --	HOUSEHOLD COOKING EQUIPMENT, TOTAL.....	(X)	624.4	(X)	536.7
36311 --	Electric household ranges and ovens and surface cooking unit equipment and parts (except small appliances).....	(X)	332.6	(X)	282.1
	Electric ranges, over 2-1/2 kw, excluding range-refrigerator combinations:				
	Free standing ranges:				
36311 11	Under 23 inches in width all types, including apartment-house type..	169.3	16.8	79.9	6.6
	23 inches up to and including 32 inches in width:				
36311 21	Low oven.....	684.4	91.7	521.1	61.2
36311 24	High oven.....	73.4	11.8	171.6	36.4
36311 26	High-low oven.....	156.3	29.0		
	33 inches and over in width:				
36311 32	Low oven and/or slide-in.....	254.4	38.6	282.9	46.6
36311 34	High oven.....	35.8	6.3		
36311 36	High-low oven.....				
	Other than free-standing:				
	Built-in ranges:				
	Built-in ovens:				
36311 53	Single oven.....	273.5	28.2	393.0	34.1
36311 55	Two ovens.....	90.8	20.9	80.7	10.7
36311 61	Surface cooking tops.....	282.0	14.7	399.0	21.8
36311 65	Drop-in ranges.....	253.2	32.5	276.6	32.4
36311 71	Household electronic stoves and ovens.....	(X)	3.4	(NA)	(NA)
36311 79	Other electric ranges not listed above.....	(X)	1.6	}	(X)
36311 81	Parts and accessories for household electric ranges and ovens, including such items as burners, rotisseries, oven racks, broiler pans, etc. (sold separately).....	(X)	36.4		
36311 00	Electric household ranges and ovens and surface unit equipment,n.s.k.....	(X)	0.7		
36312 --	Household ovens and ranges, equipment, and parts, except electric.....	(X)	289.1	(X)	253.6
36312 10	Domestic cooking appliances, except electric:				
	As reported in census of manufactures.....	(X)	254.6	(X)	219.7
	As reported on census annual Form MA-34N.....	(X)	231.6	(X)	219.5
	Cooking stoves and ranges:				
	Gas:				
	Standard type, free-standing:				
36312 11	Over 32 inch cooking top and oven.....	501.9	52.2	461.7	49.1
36312 13	Over 24 inch to 32 inch cooking top and oven.....	904.4	99.9	747.2	79.2
36312 15	Apartment ranges (24-inch cooking top and under).....	257.4	17.8	316.1	20.3
36312 17	Standard type, for built-in installation (built-in or stack-on over-broiler unit).....	193.9	21.2	331.7	32.0
36312 19	Surface cooking tops, one or more burners (quantity in number of top units).....	167.4	6.9	324.7	14.1
	Nonstandard types:				
36312 21	Wall hung.....	36.5	7.3	}	108.3
36312 23	Slide-in or drop-in (including as one unit or drop-in cooking surface with a slide-in oven).....	177.1	15.9		
36312 24	Gas hotplates.....	87.6	0.8	62.4	0.4
	Bungalow ranges:				
36312 25	Gas and coal.....	13.3	1.9	3.4	0.6
36312 27	All other.....			14.7	2.3
	Coal and wood:				
36312 35	Ranges.....	7.9	0.5	19.0	1.1
36312 37	Cookstoves.....	(D)	(D)	13.4	0.4
	Combination ranges (including ranges equipped with conversion burners):				
36312 45	Gas and oil.....	(D)	(D)	0.7	0.1
36312 47	Gas and coal.....				
36312 49	All other (including ranges equipped with conversion burners)...				
	Kerosene, gasoline, fuel, oil, and miscellaneous:				
36312 53	Kerosene ranges.....	628.2	7.0	767.9	7.9
36312 55	Kerosene cookstoves.....				
36312 59	All other (needle valve stoves, gasoline pressure, camp-stoves, etc.).....				
	Barbecuers, grills, and braziers for outdoor cooking.....				
36312 12	Gas.....	(NA)	4.8	3,710.7	23.6
36312 32	Other than gas (charcoal, etc.).....	3,718.8	24.7		
36312 98	Other household cooking equipment (except electric) and parts for cooking equipment sold separately.....	(X)	3.2	(X)	9.2
36312 00	Domestic cooking appliances, n.s.k.....	(X)	1.8	(X)	1.0

See footnotes at end of table.



## 1967 CENSUS OF MANUFACTURES

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity	Value (\$1,000)	Quantity	Value (\$1,000)
3631- --	HOUSEHOLD COOKING EQUIPMENT—Continued				
36310 00	Household cooking equipment, n.s.k. (Represents principally establishments with 10 or more employees in 1967. See Note.).....	(X)	1.8	(X)	1.1
36310 02	Household cooking equipment, n.s.k. (Represents principally establishments with fewer than 10 employees in 1967. See Note.).....	(X)	0.7		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

- Represents zero. (D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or from related figures. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3631.—HOUSEHOLD COOKING EQUIPMENT					
	Materials, parts, containers, and supplies, total.....		(X)	268.3	(X)	235.9
	Mill shapes and forms (except castings):					
	Carbon steel:					
331012	Sheet and strip.....	1,000 short tons..	275.4	44.3	244.9	40.3
331013	Plates.....	..do.....	7.0	2.2	{ 0.3	{ (Z)
331015	Structural shapes.....	..do.....				
331017	Wire and wire products.....	..do.....				
331019	All other carbon steel mill shapes and forms.....	..do.....	3.9	0.8	2.9	0.8
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	..do.....	{ (NA)	{ 4.3	{ 3.7	{ 4.8
331029	All other alloy steel mill shapes and forms.....	..do.....				
331031	Stainless steel.....	..do.....				
	Copper and copper-base alloy:					
335790	Insulated wire and cable.....	Million lbs. (copper content).	1.4	1.6	0.9	1.2
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	{ (NA)	{ 1.3	{ 1.2	{ 1.0
335123	Plate, sheet, and strip, including military cups and discs...	..do.....				
335127	Pipe and tube.....	..do.....				
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	..do.....	1.6	0.7	1.5	0.8
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	..do.....	2.3	1.6	1.5	0.8
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	..do.....	(NA)	0.2	0.1	0.1
333401	Aluminum and aluminum-base alloy refinery shapes.....		(D)	(D)	(D)	(D)
	Castings (rough and semifinished):					
332011	Iron (gray and malleable).....	1,000 short tons..	7.6	3.2	7.4	3.2
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	(D)	(D)	(D)	(D)
	Electric motors and generators:					
	Fractional horsepower electric motors (under 1 hp.):					
362110	Timing motors, synchronous and subsynchronous.....	1,000.....	(D)	(D)	492.9	0.7
362115	Other fractional horsepower electric motors (excluding timing motors).....	..do.....	1,312.1	2.9	408.5	1.9
362120	Integral horsepower electric motors and generators (1 hp. and over).....	..do.....	(D)	(D)	(NA)	(NA)
260091	Paper and paperboard containers.....		(X)	10.6	(X)	4.3
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	173.5	(X)	<sup>1</sup> 147.2
976000	Materials, components, parts, containers, and supplies consumed, n.s.k. <sup>1</sup> .....		(X)	17.7	(X)	27.4

<sup>1</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

(D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or from related figures. (NA) Not available. (X) Not applicable. (Z) Less than 0.1 when rounded.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3631, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

**U.S. DEPARTMENT OF COMMERCE  
BUREAU OF THE CENSUS  
WASHINGTON, D.C. 20233**

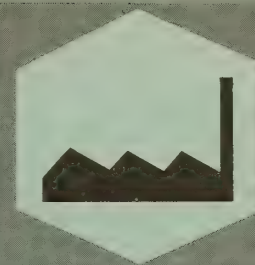
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# 1967 CENSUS OF MANUFACTURES



MC67(P)-36B-2

## INDUSTRY SERIES

### Household refrigerators and freezers

SIC Code 3632

**preliminary  
report**

The Household Refrigerators and Home and Farm Freezers Industry includes establishments primarily engaged in manufacturing household refrigerators and home and farm freezers. Establishments primarily engaged in manufacturing commercial and industrial refrigeration equipment, packaged room coolers, and dehumidifiers are classified in industry 3585.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classi-

fied in the Household Refrigerators and Freezers Industry amounted to \$1,695.0 million, an increase of 30 percent compared with 1963. Value added by manufacture at \$769.4 million in 1967 was 22 percent more than value added in 1963. Average employment in the industry showed an increase of 16 percent from 1963 to a total of 50.0 thousand employees in 1967.

Of the \$1,695.0 million total value of shipments and other receipts of establishments classified as household refrigerators and freezers, \$649.2 million were products primary to other industries; and \$99.9 million were receipts for miscellaneous activities. The industry shipments of primary

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)
INDUSTRY 3632.--HOUSEHOLD REFRIGERATORS AND FREEZERS														
1967 Census....	35	24	50.0	357.8	41.3	79.4	273.5	769.4	959.0	1,695.0	25.9	308.5	59	96
1966 ASM <sup>1</sup> .....	(NA)	(NA)	53.9	388.2	45.2	88.8	300.6	752.2	965.8	1,674.9	32.1	314.4	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	48.6	344.6	39.9	81.5	265.7	740.9	858.1	1,593.5	40.8	255.4	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	45.8	307.5	37.8	76.3	236.9	680.2	805.5	1,455.0	23.6	242.7	(NA)	(NA)
1963 Census....	34	25	43.1	280.0	35.2	70.0	212.2	631.3	696.1	1,306.5	21.8	208.6	66	99
1962 ASM <sup>1</sup> .....	(NA)	(NA)	42.1	259.1	34.8	73.0	199.4	570.4	661.4	1,205.2	13.3	179.7	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	41.7	253.6	33.9	66.8	192.4	470.1	622.0	1,101.6	13.8	164.0	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	47.1	265.1	38.8	73.9	202.9	525.5	660.7	1,156.8	16.0	180.9	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	47.0	253.6	39.0	77.4	195.1	537.3	672.9	1,199.4	*12.5	163.8	(NA)	(NA)
1958 Census <sup>2</sup> ....	26	26	41.5	221.4	33.2	65.6	167.4	433.4	537.6	1,002.3	9.9	140.5	74	98

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

**BUREAU OF THE CENSUS** George Hay Brown, Director



products represented 59 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 66 percent in 1963.

The total value of household refrigerators and freezers shipped by all producers in 1967 was \$981.8 million of which \$945.9 million, or 96 percent, were shipped by plants classified in industry 3632, Household Refrigerators and Freezers, while the remainder was shipped by

plants classified in other industries. This percent, called the coverage ratio, was 99 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
	INDUSTRY 3632.--HOUSEHOLD REFRIGERATORS AND FREEZERS												
United States, total.....	35	24	50.0	357.8	41.3	79.4	273.5	769.4	959.0	1,695.0	25.9	43.1	631.3
East North Central...	16	15	38.5	284.2	31.6	61.1	217.3	550.3	731.0	1,257.6	18.7	34.1	498.2
Wisconsin.....	3	3	0.6	3.6	0.5	0.9	2.7	6.6	8.5	14.3	0.1	0.5	5.4

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	1967			1963		
		Production for all purposes (thousand units)	Total shipments, including interplant transfers		Production for all purposes (thousand units)	Total shipments, including interplant transfers	
			Quantity (thousand units)	Value (million dollars)		Quantity (thousand units)	Value (million dollars)
3632- --	HOUSEHOLD REFRIGERATORS AND FREEZERS, TOTAL.....	(X)	(X)	981.8	(X)	(X)	831.8
36321 --	Household refrigerators, including combination refrigerator-freezers.....	4,577.6	4,779.5	833.1	4,220.6	4,098.4	687.9
	Household mechanical refrigerators (including combination refrigerator-freezers):						
	Complete units:						
36321 07	6.4 cubic feet and under.....	24.7	26.5	2.7	40.8	45.2	4.0
36321 08	6.5 to 8.4 cubic feet.....	39.3	54.3	5.7	47.0	47.0	5.0
36321 15	8.5 to 9.4 cubic feet.....	195.1	213.2	22.4	429.6	413.2	44.8
36321 16	9.5 to 10.4 cubic feet.....	99.8	91.1	11.7	206.4	201.4	25.2
36321 17	10.5 to 11.4 cubic feet.....	946.1	1,021.0	124.0	922.6	888.1	111.4
36321 21	11.5 to 12.4 cubic feet.....	140.9	175.5	21.6	768.4	775.6	127.0
36321 22	12.5 to 13.4 cubic feet.....	965.6	987.6	153.1	1,234.9	1,175.4	226.4
36321 27	13.5 to 14.4 cubic feet.....	436.6	435.9	79.3	147.1	151.7	35.8
36321 33	14.5 to 15.4 cubic feet.....	662.2	721.6	142.6			
36321 36	15.5 to 16.4 cubic feet.....	319.1	334.1	63.6			
36321 42	16.5 to 17.4 cubic feet.....	115.7	133.6	31.3	403.6	378.5	102.6
36321 44	17.5 to 18.4 cubic feet.....	210.6	182.3	54.6			
36321 46	18.5 to 19.4 cubic feet.....	397.3	378.2	113.5			
36321 48	19.5 cubic feet and over.....						
36321 61	Range-refrigerator and/or sink combinations.....	24.6	24.6	7.0	20.2	22.4	5.6
36322 --	Home and farm freezers.....	1,003.1	1,039.4	141.2	1,047.7	1,006.6	143.1
	Home and farm freezers, complete units for freezing and/or storing foods:						
36322 13	8.4 cubic feet and under.....	33.3	45.4	5.1	16.8	18.4	1.7
36322 16	8.5 to 10.4 cubic feet.....	98.5	89.5	10.2	56.6	49.5	5.8
36322 19	10.5 to 12.4 cubic feet.....				96.9	96.2	12.9
	12.5 to 14.4 cubic feet:						
36322 21	Upright type.....	67.0	78.5	9.7	143.7	138.2	18.8
36322 22	Chest type.....						
	14.5 to 15.4 cubic feet:						
36322 24	Upright type.....	77.8	84.1	11.3	139.8	128.1	16.6
36322 25	Chest type.....	106.9	111.6	12.5	84.8	87.8	10.6
	15.5 to 17.4 cubic feet:						
36322 27	Upright type.....	203.4	199.9	29.4	123.7	118.9	18.7
36322 28	Chest type.....	71.4	75.2	9.7	103.9	102.3	13.6
	17.5 to 19.4 cubic feet:						
36322 31	Upright type.....	127.4	128.8	20.0	51.1	50.7	9.2
36322 32	Chest type.....	26.1	26.7	3.2	19.5	17.5	2.4
	19.5 to 21.4 cubic feet:						
36322 34	Upright type.....	72.9	76.0	10.7	48.0	42.7	7.4
36322 35	Chest type.....				51.8	51.7	8.3
	21.5 to 23.4 cubic feet:						
36322 41	Upright type.....	7.2	8.4	1.8	<sup>1</sup> 32.5	<sup>1</sup> 31.5	<sup>1</sup> 5.7
36322 43	Chest type.....	77.0	80.5	11.2	<sup>2</sup> 78.5	<sup>2</sup> 72.9	<sup>2</sup> 11.2
	23.5 cubic feet and over:						
36322 45	Upright type.....	34.2	34.8	6.4	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
36322 47	Chest type.....				( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )

See footnotes at end of table.

## 1967 CENSUS OF MANUFACTURES

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	1967			1963		
		Production for all purposes (thousand units)	Total shipments, including interplant transfers		Production for all purposes (thousand units)	Total shipments, including interplant transfers	
			Quantity (thousand units)	Value (million dollars)		Quantity (thousand units)	Value (million dollars)
3632- --	HOUSEHOLD REFRIGERATORS AND FREEZERS--Continued						
36320 00	Household refrigerators and home and farm freezers, n.s.k. (Represents principally establishments with 10 employees or more in 1967. See Note.).....	(X)	(X)	7.0	}	(X)	0.8
36320 02	Household refrigerators and home and farm freezers, n.s.k. (Represents principally establishments with fewer than 10 employees in 1967. See Note.).....	(X)	(X)	1.5			

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>In 1963 23.5 cubic feet and over upright-type are included in 21.5 to 23.4 cubic feet upright-type freezers.

<sup>2</sup>In 1963 23.5 cubic feet and over chest-type are included in 21.5 to 23.4 cubic feet chest-type freezers.



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3632.--HOUSEHOLD REFRIGERATORS AND FREEZERS					
	Materials, parts, containers, and supplies, total.....		(X)	878.2	(X)	648.6
	Mill shapes and forms (except castings):					
	Carbon steel:					
331012	Sheet and strip.....	1,000 short tons	588.0	96.4	640.6	98.5
331017	Wire and wire products.....	..do.....	6.0	1.1	5.7	1.0
331011	Bar and bar shapes.....	..do.....	97.4	19.4	26.2	6.7
331013	Plate.....	..do.....				
331015	Structural shapes.....	..do.....				
331019	All other carbon steel mill shapes and forms.....	..do.....				
331020	Alloy steel (except stainless).....	..do.....	4.9	2.8	4.3	3.6
331031	Stainless steel.....	..do.....				
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction only).....	Million lbs.....	3.9	3.9	2.8	2.0
335790	Insulated wire and cable.....	Million lbs. (copper content)				
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	..do.....	27.7	25.3	16.8	12.7
335123	Plate, sheet, and strip (including military cups and discs).....	..do.....				
335127	Pipe and tube.....	..do.....				
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	Million lbs.....	36.6	13.2	29.8	11.7
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	..do.....	10.6	6.4	4.7	3.6
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	..do.....			1.9	0.8
	Castings (rough and semifinished):					
	Iron (gray and malleable).....	1,000 short tons	( <sup>1</sup> )	( <sup>1</sup> )	28.1	7.5
332300	Steel.....	..do.....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	4.3	3.2	3.4	2.7
339100	Iron and steel forgings.....	1,000 short tons	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
	Electric motors and generators:					
	Fractional horsepower electric motors (under 1 hp.):					
362210	Timing motors, synchronous and subsynchronous.....	1,000.....	1,511.4	4.4	1,102.5	4.5
362115	Fractional horsepower electric motors (excluding timing motors).....	..do.....	12,321.1	73.4	9,822.2	54.0
362120	Integral horsepower motors and generators (1 hp. and over)....	..do.....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
	Bearings:					
356218	Ball.....	..do.....	( <sup>1</sup> )	( <sup>1</sup> )	(X)	3.2
356228	Roller.....	..do.....	-	-	-	-
260091	Paper and paperboard containers.....	..do.....	(NA)	31.8	(NA)	17.5
970099	All other materials and components, parts, containers, and sup- plies consumed.....	..do.....	(X)	587.4	(X)	387.6
976000	Materials, components, parts, containers, and supplies consumed, n.s.k. <sup>2</sup> .....	..do.....	(X)	9.5	(X)	30.9

- Represents zero. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>The value for these materials are included in material code 970099 "all other materials and components, parts, containers, and supplies consumed" to avoid disclosing operation of individual companies.

<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this included estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3632, these small establishments accounted for approximately 0 percent of payrolls and 0 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

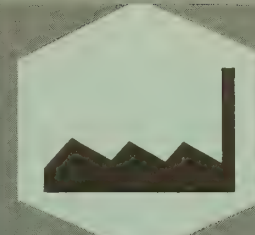
**U.S. DEPARTMENT OF COMMERCE  
BUREAU OF THE CENSUS  
WASHINGTON, D.C. 20233**

**OFFICIAL BUSINESS**

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# 1967 CENSUS OF MANUFACTURES



M1067(P)-36B-3

## INDUSTRY SERIES

### Household laundry equipment

SIC Code 3633

**preliminary  
report**

The Household Laundry Equipment Industry includes establishments primarily engaged in manufacturing commercial laundry equipment such as washing machines, wringers, driers, and ironers for household use. Establishments primarily engaged in manufacturing commercial laundry equipment are classified in industry 3582. Although the standard industrial classification for coin operated washing machines is industry 3582, data for these machines are included in industry 3633 in 1967, as in 1963.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Household Laundry Equipment Industry amounted to \$982.5 million, an increase of 29 percent compared with 1963. Value added by manufacture at \$408.5 million in 1967 was 15 percent more than value added in 1963. Average employment in the industry showed an increase of 21 percent from 1963 to a total of 22.2 thousand employees in 1967.

Of the \$982.5 million total value of shipments and other receipts of establishments classified as household laundry equipment, \$142.8 million were products primary to other industries; and \$22.5 million were receipts for miscellaneous activities. The industry shipments of primary

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)							
	INDUSTRY 3633.--HOUSEHOLD LAUNDRY EQUIPMENT													
1967 Census....	35	28	22.2	154.2	17.8	33.7	113.9	408.5	562.3	982.5	31.8	138.6	85	88
1966 ASM <sup>1</sup> .....	(NA)	(NA)	23.1	160.1	18.4	36.0	115.5	415.8	556.7	946.9	19.7	153.5	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	21.0	140.2	16.1	32.1	98.1	392.9	482.9	889.2	19.2	120.1	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	20.4	131.8	16.5	32.8	97.8	379.7	466.4	831.8	14.4	135.1	(NA)	(NA)
1963 Census....	39	28	18.3	115.4	14.7	28.8	85.9	353.9	416.0	760.2	9.2	110.8	89	87
1962 ASM <sup>1</sup> .....	(NA)	(NA)	21.1	131.6	15.6	30.6	88.5	346.4	414.8	755.7	6.4	110.9	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	21.5	126.7	15.6	30.4	83.6	313.8	395.7	715.4	7.1	101.9	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	23.4	131.8	17.3	32.9	88.9	279.1	433.4	723.0	10.7	107.2	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	25.9	142.1	19.4	37.5	96.6	347.4	488.7	835.8	11.1	121.2	(NA)	(NA)
1958 Census <sup>2</sup> ...	39	33	24.6	134.3	18.0	35.8	89.6	324.5	427.2	738.9	7.2	118.5	91	91

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued September 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE**    **Maurice H. Stans, Secretary**  
**Rocco C. Siciliano, Under Secretary**  
**BUREAU OF THE CENSUS**

products represented 85 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 89 percent in 1963.

The total value of household laundry equipment shipped by all producers in 1967 was \$931.2 million of which \$817.2 million, or 88 percent, were shipped by plants classified in industry 3633, Household Laundry Equipment, while the remainder was shipped by plants classified in

other industries. This percent, called the coverage ratio, was 87 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
United States, total.....	INDUSTRY 3633.—HOUSEHOLD LAUNDRY EQUIPMENT												
	35	28	22.2	154.2	17.8	33.7	112.9	408.5	562.3	982.5	31.8	18.3	353.9
East North Central....	22	19	14.9	101.5	11.8	22.0	73.7	241.9	417.3	660.6	19.0	12.8	220.3

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (thousand units)	Value (million dollars)	Quantity (thousand units)	Value (million dollars)
3633- --	HOUSEHOLD LAUNDRY EQUIPMENT, TOTAL.....	(X)	931.2	(X)	766.1
36331 --	Household mechanical washing machines, dryers, and washer-dryer combinations.....	(X)	843.1	(X)	698.8
	Washing machines, mechanical, including those with dishwasher attachments:				
	Standard size, electrically driven:				
36331 31	Fully automatic.....	4,084.6	531.5	3,528,889	475.4
36331 33	Semiautomatic.....				
36331 36	Nonautomatic, wringer type and spinner type.....				
36331 39	All other, including gasoline-driven and small size.....	(NA)	0.3	(X)	56.7
	Dryers, mechanical:				
36331 51	Gas.....	823.7	87.8	551.0	58.2
36331 55	Electric.....	1,853.1	171.6	1,079.3	102.0
	Washer-dryer combinations (in one cabinet):				
36331 81	Electric.....	68.7	15.1	31.1	6.5
36331 85	Gas.....				
36332 --	Other household laundry equipment and parts.....	(X)	84.8	(X)	66.8
36332 71	Other household laundry equipment, including wringers.....	(X)	8.1	(X)	4.7
36332 98	Parts, accessories, and attachments for household laundry equipment, sold separately.....	(X)	76.7	(X)	62.1
36330 00	Household laundry equipment, n.s.k. (Represents principally establishments with 10 employees or more in 1967. See Note).....	(X)	2.8	(X)	(Z)
36330 02	Household laundry equipment, n.s.k. (Represents principally establishments with fewer than 10 employees in 1967. See Note).....	(X)	0.5	(X)	0.5

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable. (Z) Less than 0.1 when rounded.

## 1967 CENSUS OF MANUFACTURES

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
INDUSTRY 3633.--HOUSEHOLD LAUNDRY EQUIPMENT						
	Materials, parts, containers, and supplies, total.....		(X)	532.6	(X)	396.1
	Mill shapes and forms (except castings):					
	Carbon steel:					
331012	Sheet and strip.....	1,000 short tons..	450.8	75.2	397.9	60.5
331011	Bars and bar shapes.....	..do.....				
331017	Wire and wire products.....	..do.....				
331019	All other carbon steel mill shapes and forms.....	..do.....				
	Alloy steel (except stainless):		(NA)	14.1	{	
331021	Bars and bar shapes.....	..do.....	2.4	2.3	{	-
331029	All other alloy steel mill shapes and forms.....	..do.....				-
331031	Stainless steel.....	..do.....				1.2
	Cooper and cooper-base alloy:					
335790	Insulated wire and cable.....	Million lbs. (copper content).	2.4	2.7	1.5	1.2
335728	Bare wire (for electrical conduction).....	Million lbs.....	(D)	(D)	-	-
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	..do.....	(NA)	3.9	{	(D)
335123	Plate, sheet, and strip (including military cups and discs).. Pipe and tube.....	..do.....				-
335127		..do.....				-
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	..do.....	6.1	2.0	2.0	1.0
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	..do.....				
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	..do.....				
333401	Aluminum and aluminum-base alloy refinery shapes.....	1,000 short tons..	(D)	(D)	(D)	(D)
	Castings (rough and semifinished):					
332011	Iron (gray and malleable).....	..do.....	46.6	11.8	34.2	10.7
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	5.4	3.3	10.5	6.2
	Electric motors and generators:					
	Fractional horsepower electric motors (under 1 hp.):					
362110	Timing motors, synchronous and subsynchronous.....	1,000.....	4,105.5	19.6	1,590.3	4.3
362115	Other fractional horsepower electric motors (excluding timing motors).....	..do.....	5,091.3	48.1	5,875.5	52.4
260091	Paper and paperboard containers.....		(X)	13.9	(X)	11.3
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	319.7	(X)	230.4
976000	Materials, components, parts, containers, and supplies consumed, n.s.k. ....		(X)	12.5	(X)	8.7

- Represents zero. (D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or from related figures. n.s.k. Not specified by kind. (NA) Not available. (X) Not applicable.

<sup>1</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3633, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-36B-4

## INDUSTRY SERIES

### Electric housewares and fans

SIC Code 3634

**preliminary  
report**

The Electric Housewares and Fans Industry includes establishments primarily engaged in manufacturing electric housewares for heating, cooking, and other purposes; and electric fans, including ventilating and exhaust household-type fans. Important products of this industry include electric air heaters, bed coverings, blenders, broilers, deep-fat fryers, flatirons, food mixers, hotplates, percolators and coffeemakers, roasters, toasters, desk and bracket fans, hassock or floor fans, window-type propeller fans, roll-abouts and household and kitchen ventilating and exhaust fans. Establishments primarily engaged in manufacturing industrial and commercial blowers, industrial and commercial exhaust and ventilating fans, and attic fans are classified in industry 3564.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Electric Housewares and Fans Industry amounted to \$1,118.9 million, an increase of 32 percent compared with 1963. Value added by manufacture at \$597.0 million in 1967 was 29 percent more than value added in 1963. Average employment in the industry showed an increase of 16 percent from 1963 to a total of 45.0 thousand employees in 1967.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)
INDUSTRY 3634. --ELECTRIC HOUSEWARES AND FANS														
1967 Census....	289	142	45.0	241.8	35.9	69.8	163.0	597.0	519.0	1,118.9	27.2	232.7	90	87
1966 ASM <sup>1</sup> .....	(NA)	(NA)	44.7	236.3	36.6	70.4	161.3	600.2	504.6	1,127.8	25.9	237.7	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	41.3	211.3	33.9	68.4	144.8	547.4	464.0	980.2	26.3	187.2	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	38.3	190.9	30.3	60.5	128.7	478.4	405.9	889.1	14.7	150.9	(NA)	(NA)
1963 Census.....	312	136	38.8	188.3	31.1	59.6	126.9	463.8	394.6	850.3	17.0	159.8	87	81
1962 ASM <sup>1</sup> .....	(NA)	(NA)	35.0	170.6	27.9	52.2	112.9	404.0	355.7	740.5	10.7	138.4	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	31.8	151.7	25.3	47.7	100.0	360.0	310.3	671.1	8.7	123.1	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	32.3	152.6	25.8	49.1	101.5	355.7	293.0	628.6	11.2	129.3	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	30.2	139.1	23.8	45.9	93.1	335.0	261.0	596.2	10.7	104.9	(NA)	(NA)
1958 Census <sup>2</sup> ...	311	105	29.1	128.8	22.5	42.8	84.6	301.0	245.1	559.1	10.0	101.0	86	82

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Of the \$1,118.9 million total value of shipments and other receipts of establishments classified as electric housewares and fans, \$99.8 million were products primary to other industries; and \$94.6 million were receipts for miscellaneous activities. The industry shipments of primary products represented 90 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 87 percent in 1963.

The total value of electric housewares and fans shipped by all producers in 1967 was \$1,057.7 million of which \$924.5 million, or 87 percent,

were shipped by plants classified in industry 3634, Electric Housewares and Fans, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 81 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

#### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3634, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-36E, Electric Housewares and Fans.

## 1967 CENSUS OF MANUFACTURES

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TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
	INDUSTRY 3634.-ELECTRIC HOUSEWARES AND FANS												
United States, total.....	289	142	45.0	241.8	35.9	69.8	163.0	597.0	519.0	1,118.9	27.2	38.8	463.8
New England.....	22	16	4.2	24.2	3.5	6.8	16.9	77.7	44.1	122.7	2.5	5.4	90.6
Massachusetts.....	8	6	0.3	1.2	0.2	0.4	0.7	3.5	2.7	5.9	(Z)	0.3	1.1
Middle Atlantic.....	79	34	8.5	45.3	6.9	12.7	31.1	109.7	93.4	201.6	7.0	6.5	81.3
New York.....	51	22	4.5	23.6	3.7	7.0	16.2	54.1	51.3	106.5	1.7	4.2	44.3
New Jersey.....	17	5	0.3	1.4	0.2	0.5	1.0	3.0	2.5	5.5	0.2	(D)	(D)
Pennsylvania.....	11	7	3.7	20.3	2.9	5.1	13.9	52.6	39.7	89.6	5.1	(D)	(D)
East North Central....	62	27	11.1	76.2	7.8	14.9	43.2	150.3	134.7	284.9	5.6	12.7	157.9
Ohio.....	12	7	2.2	15.0	1.7	3.5	9.7	45.3	27.2	72.8	1.1	(D)	(D)
Illinois.....	25	12	6.8	46.8	4.7	8.6	25.9	73.8	86.2	160.0	3.1	7.0	97.2
West North Central....	20	13	4.4	20.1	3.9	8.3	16.2	44.7	44.8	87.9	2.9	2.8	23.9
South Atlantic.....	34	21	7.7	34.4	6.4	12.6	25.7	90.1	103.3	205.4	4.5	3.2	27.7
Tennessee.....	9	7	2.5	11.1	2.1	4.4	8.3	30.1	27.2	58.2	1.8	2.4	25.7

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Shipments			
		1967		1963	
		Quantity	Value (million dollars)	Quantity	Value (million dollars)
3634- --	ELECTRIC HOUSEWARES AND FANS, TOTAL.....	(X)	1,057.7	(X)	810.0
36341 --	Electric fans, except industrial type:				
36341 00	As reported in the census of manufactures.....	(X)	123.3	(X)	102.0
	As reported on Census annual Form MA-36E.....	(X)	126.5	(X)	98.9
	Desk and wall bracket (all sizes):				
36341 37	Oscillating.....	676	8.4	622	6.6
36341 51	Nonoscillating.....	657	4.9	327	2.3
	Window type propeller fans (household):				
	Permanent type (reversible and nonreversible):				
36341 75	20 inch.....	721	12.8	558	10.4
36341 77	Other than 20 inch.....	456	5.2	483	4.9
36341 81	Portable (suitcase type), all sizes.....	2,252	27.9	1,387	18.9
36341 83	Roll-abouts (mounted on portable stand), all sizes.....	488	9.0	351	7.4
	Household and kitchen ventilating and exhaust fans:				
	Electric range hoods:				
36341 84	Ducted.....	880	16.8	1,690	29.8
36341 85	Nonducted.....	532	13.8		
36341 86	Oven hoods, ducted and nonducted.....	2,225	20.4	1,162	14.4
36341 87	Other household and kitchen ventilating and exhaust fans.....				
36341 98	Other household electric fans (including high pedestal fans and floor or hassock type fans).....	545	7.2	258	4.1
36342 --	Electric razors and dry shavers:				
36342 00	As reported in the census of manufactures.....	(X)	66.2	(X)	53.4
	As reported on Census annual Form MA-36E.....	4,800	63.8	(X)	53.4
36342 13	Men's.....	2,878	47.5	3,839	53.4
36342 15	Ladies'.....	1,922	16.3		
36343 --	Other small household electric appliances:				
36343 00	As reported in the census of manufactures.....	(X)	789.6	(X)	562.6
	As reported on Census annual Form MA-36E.....	(X)	720.7	(X)	561.9
	Broilers:				
36343 12	Without rotisseries.....	878	6.7	1,178	10.6
36343 13	With rotisseries.....	830	13.1		
	Automatic coffeemakers:				
36343 14	Vacuum and perculator types.....	6,000	50.3	5,758	51.8
36343 15	Urn type.....	2,395	21.3		
36343 23	Deep fat fryers (excluding covers and controls shipped separately)....	532	4.3	503	3.5
36343 24	Ovens and roasters (with or without broiler attachments).....	322	4.2	301	3.8
36343 29	Hotplates and disc stoves (1,650 watts or less) (except built-in-units).....	790	3.2	792	3.3
36343 36	Toasters, automatic.....	3,891	42.5	3,294	33.3
36343 39	Waffle irons, sandwich grills, griddles, and combinations.....	1,364	17.1	1,084	12.3
36343 42	Frying pans (skillets) (excluding covers and controls shipped separately).....	2,291	28.3	2,009	23.4
	Air space heaters (portable room heaters only):				
36343 43	Fan forced type.....	1,896	21.7	1,601	15.9
36343 44	Other types (including convector, radiant, and convector-radiant)...	215	2.7	551	6.6
	Air space heaters for fixed or permanent installations (except warm air furnaces and unit heaters):				
36343 45	Baseboard (excluding glass panel type).....	(X)	21.5	(X)	20.7
36343 47	Other.....	(X)	13.8	(X)	8.8
36343 48.	Corn poppers.....	1,554	5.4	1,036	3.1
36343 49	Other household electric cooking and heating appliances (immersion heaters, faucet attachment water heaters, steam radiators, pressure cookers, casseroles, nonautomatic coffeemakers, automatic sauce pans, hot trays, food warmers, etc.) (excluding covers and controls shipped separately).....	(X)	30.1	(X)	23.4
	Standard household electric irons:				
36343 50	Steam and spray.....	7,596	69.8	6,773	59.1
36343 61	Other than steam, automatic type (thermostat controlled heat).....	1,567	9.6	1,588	8.7

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963--Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Shipments			
		1967		1963	
		Quantity	Value (million dollars)	Quantity	Value (million dollars)
3634	ELECTRIC HOUSEWARES AND FANS--Continued				
36343	Other small household electric appliances: As reported on Census annual Form MA-36E--Continued				
36343 65	Travel irons.....	419	3.2	443	3.1
36343 69	Other electric irons (tailors', milliners', boudoir, nonautomatic standard household, etc.).....				
	Household food preparation appliances:				
	Food mixers (including standard attachments sold together with mixers):				
36343 71	Hand (portable).....	3,845	31.1	2,624	22.4
36343 75	Stand.....	771	19.8	710	15.0
36343 76	Blenders (liquefiers).....	3,610	71.2	1,148	19.7
36343 77	Ice crushers.....	405	3.8	45	0.5
36343 78	Other household food preparation appliances (including drink mixers, whippers, juicers, grinders, slicers, and choppers).....	(X)	8.9	(X)	10.7
	Miscellaneous electric appliances:				
36343 83	Electric blankets.....	4,036	37.1	5,217	44.7
36343 85	Other electric bed coverings (including sheets, mattress covers, and comforters).....				
36343 87	Heating pads (including foot warmers).....				
36343 88	Electric knives.....	2,319	23.7	(1)	(1)
36343 91	Electric tooth brushes.....	1,568	13.6	1,239	11.2
36343 92	Air purifiers (portable).....	(2)	(2)	(2)	(2)
36343 93	Can openers (single purpose units; combination purpose units such as can opener combination with knife sharpener, etc.).....	5,504	42.7	3,189	25.4
	Hair dryers:				
36343 94	With bonnets.....	3,201	39.4	7,565	84.6
36343 95	Without bonnets.....	529	8.0	50	0.2
36343 96	Humidifiers (portable).....	149	4.1	382	3.8
36343 97	Knife sharpeners.....	48	0.3	319	2.0
36343 98	Other electric appliances (curling irons, vibrators, hand and face dryers etc.).....	(X)	240.1	(X)	22.2
36344	Parts and attachments for small household electric appliances.....	(X)	58.7	(X)	81.5
36344 11	Parts and accessories for electric housewares and fans.....	(X)	55.8	(X)	74.6
36344 31	Electric controls for frying pans and for other household cooking appliances, shipped separately.....	(X)	2.9	(X)	6.9
36340 00	Electrical housewares and fans, n.s.k. (represents principally establishments with 10 employees or more in 1967. See Note.).....	(X)	14.1	(X)	13.4
36340 02	Electrical housewares and fans, n.s.k., (represents principally establishments with fewer than 10 employees in 1967. See Note.).....	(X)	5.8		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000) and 002 figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind.

(X) Not applicable.

<sup>1</sup>For 1963, data on electric knives were included with product codes 3634378, Other household food preparation appliances, and 3634398, Other electric appliances.

<sup>2</sup>Portable air purifiers are included with "other electric appliances" (3634398) in order to avoid disclosing figures of individual companies.

## 1967 CENSUS OF MANUFACTURES

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963							
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)						
	INDUSTRY 3634.--ELECTRIC HOUSEWARES AND FANS											
	Materials, components, parts, supplies, and containers, total	.....	(X)	454.6	(X)	335.5						
	Mill shapes and forms (except castings):											
	Carbon steel:											
331011	Bars and bar shapes.....	1,000 short tons	(NA)	2.1	7.2	2.0						
331012	Sheet and strip.....	.....do.....	131.9	26.9	102.2	17.5						
331017	Wire and wire products.....	.....do.....	}	(NA)	1.7	0.6						
331015	Structural shapes.....	.....do.....			-	-						
331013	Plates.....	.....do.....			}	5.3	2.6					
331019	All other carbon steel mill shapes and forms.....	.....do.....										
	Alloy steel (except stainless):											
331021	Bars and bar shapes.....	.....do.....	}	(NA)	18.7	14.6	8.2					
331029	All other alloy steel mill shapes and forms.....	.....do.....										
331031	Stainless steel.....	.....do.....			2.0	2.5						
	Copper and copper-base alloy:											
335728	Bare wire (for electrical conduction only).....	Million lbs....	6.9	5.3	3.9	3.0						
335790	Insulated wire and cable.....	Million lbs. (copper content)	10.1	9.3	5.6	5.6						
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs....	}	(NA)	2.4	0.2	(Z)					
335123	Plate, sheet, and strip (including military cups and discs).. Pipe and tube.....	.....do.....						1.1	0.5	0.7	1.2	(Z)
335127		.....do.....										
	Aluminum and aluminum-base alloy:											
335202	Sheet, plate, and foil.....	.....do.....	22.6	9.2	12.6	5.7						
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.. All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	.....do.....	1.3	0.8	2.1	1.0						
335209		.....do.....	3.7	1.8	3.1	1.5						
333401	Aluminum and aluminum-base alloy refinery shape.....	1,000 short tons	8.9	3.9	(D)	(D)						
	Castings (rough and semifinished):											
332011	Iron (gray and malleable).....	.....do.....	(D)	(D)	0.6	(Z)						
336100	Aluminum and aluminum-base alloy.....	1,000 lbs....	19.6	10.7	7.8	5.9						
	Electric motors and generators:											
	Fractional horsepower electric motors (under 1 hp.):											
362110	Timing motors, synchronous and subsynchronous.....	1,000.....	}	6,258.2	16.9	238.1	2.3					
362115	Other fractional horsepower electric motors (excluding timing motors).....	.....do.....				6,192.8	14.6					
362120	Integral horsepower electric motors and generators (1 hp. and over).....	.....do.....	(D)	(D)	(X)	(X)						
280091	Paper and paperboard containers.....	.....	(X)	22.7	(X)	14.4						
970099	All other materials and components, parts, containers, and supplies consumed.....	.....	(X)	261.0	(X)	214.2						
	Materials, components, containers, and supplies consumed, n.s.k. <sup>1</sup> .....	.....	(X)	58.6	(X)	32.0						

- Represents zero.

(D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher level totals or from related figures.

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3634, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

Textile mill products • Apparel and leather • Chemicals, rubber, and plastics • Machinery and equipment • Primary metals • Intermediate metal products • Processed foods • Lumber, furniture, and paper products • Stone, clay, and glass products.

A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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U. S. DEPARTMENT OF COMMERCE  
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# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

### Household vacuum cleaners

SIC Code 3635

**preliminary  
report**

The Household Vacuum Cleaners Industry includes establishments primarily engaged in manufacturing vacuum cleaners for household use. Establishments primarily engaged in manufacturing vacuum cleaners for industrial use are classified in industry 3589, and installation of built in vacuum cleaner systems in industry 1796.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Household Vacuum Cleaners Industry

amounted to \$308.1 million, an increase of 76 percent compared with 1963. Value added by manufacture at \$192.1 million in 1967 was 65 percent more than value added in 1963. Average employment in the industry showed an increase of 75 percent from 1963 to a total of 10.0 thousand employees in 1967.

Of the \$308.1 million total value of shipments and other receipts of establishments classified as Household Vacuum Cleaners, \$87.0 million were products primary to other industries; and \$9.1 million were receipts for miscellaneous activities. The industry shipments of primary products represented 71 percent of the total manufactured product shipments, primary and

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (per-cent)	Coverage ratio (per-cent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3635.—HOUSEHOLD VACUUM CLEANERS														
1967 Census....	34	17	10.0	62.3	7.6	14.2	42.3	192.1	123.5	308.1	7.4	59.9	71	82
1966 ASM <sup>1</sup> .....	(NA)	(NA)	8.2	51.1	6.2	11.9	34.3	156.1	111.2	252.6	4.6	49.1	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	6.4	40.8	4.8	9.1	26.3	131.4	82.3	210.6	6.6	32.0	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	5.7	35.7	4.1	8.1	22.7	119.7	65.2	184.7	3.9	28.1	(NA)	(NA)
1963 Census.....	34	13	5.7	35.5	4.2	8.2	22.7	116.1	65.3	175.4	5.7	30.1	87	80
1962 ASM <sup>1</sup> .....	(NA)	(NA)	5.6	33.4	4.0	7.8	20.7	107.5	59.7	163.6	4.2	23.5	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	5.7	33.3	4.0	7.6	19.7	90.2	58.0	150.8	2.8	20.8	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	5.7	33.6	4.1	7.9	20.3	94.1	62.4	154.4	2.3	23.0	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	5.9	33.6	4.2	8.5	20.7	90.2	65.5	153.7	4.2	21.8	(NA)	(NA)
1958 Census <sup>2</sup> ...	27	14	5.3	29.9	3.7	7.5	18.0	84.2	55.4	142.0	2.2	16.7	93	83

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary  
 Rocco C. Siciliano, Under Secretary  
 BUREAU OF THE CENSUS George Hay Brown, Director

secondary. This percent, called the specialization ratio for the industry, was 87 percent in 1963.

The total value of Household Vacuum Cleaners shipped by all producers in 1967 was \$258.6 million of which \$212.0 million, or 82 percent, were shipped by plants classified in industry 3635, Household Vacuum Cleaners, while the remainder was shipped by plants classified in

other industries. This percent, called the coverage ratio, was 80 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in table 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

(see appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
INDUSTRY 3635.—HOUSEHOLD VACUUM CLEANERS													
United States, total.....	34	17	10.0	62.3	7.6	14.2	42.3	192.1	123.5	308.1	7.4	5.7	116.1
New York.....	6	3	0.2	0.7	0.1	0.3	0.5	1.5	1.1	2.6	(2)	0.1	0.7
Ohio.....	11	5	4.2	29.2	3.2	5.9	20.0	93.8	50.7	143.3	(D)	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000 units)	Value (million dollars)	Quantity (1,000 units)	Value (million dollars)
3635- --	HOUSEHOLD VACUUM CLEANERS.....	(X)	258.6	(X)	183.1
	Household vacuum cleaners, including parts and attachments:				
36350 11	Hand-type.....	129.5	2.0	123.4	2.6
36350 31	Upright, tank, canister, and other general purpose household type.....	6,100.3	212.4	3,815.4	152.3
36350 41	Complete power units, central system type.....	18.6	2.6		
36350 51	Attachments and cleaning tools, sold separately.....	(X)	17.8	(X)	16.6
36350 71	Parts for household type vacuum cleaners.....	(X)	20.0	(X)	9.3
36350 00	Household vacuum cleaners, n.s.k. (Represents principally establishments with 10 employees or more in 1967. See Note.).....	(X)	2.9	—	2.3
36350 02	Household vacuum cleaners n.s.k. (Represents principally establishments with fewer than 10 employees in 1967. See Note.).....	(X)	0.9		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(X) Not applicable.



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3635.—HOUSEHOLD VACUUM CLEANERS					
	Materials, components, parts, supplies, and containers, total.....		(X)	111.7	(X)	59.4
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	1.3	0.3	1.1	0.2
331012	Sheet and strip.....	..do.....	27.2	5.0	16.7	3.2
331015	Structural shapes.....	..do.....	-	-	} 4.6	1.1
331017	Wire and wire products.....	..do.....	(NA)	0.3		
331019	All other carbon steel mill shapes and forms.....	..do.....	1.8	0.8		
	Alloy steel (except stainless):					
331021	Bar and bar shapes.....	..do.....	} (NA)	0.7	0.7	0.4
331029	All other alloy steel mill shapes and forms.....	..do.....				
331031	Stainless steel.....	..do.....				
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction only).....	Million lbs.....	2.3	1.9	1.3	0.7
335790	Insulated wire and cable.....	Million lbs..... (copper content)	(NA)	2.6	0.4	1.0
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	} (NA)	0.9	{ 0.2	0.1
335123	Plate, sheet, and strip (including military cups and discs).	..do.....				
335127	Pipe and tube.....	..do.....				
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate and foil.....	Million lbs.....	0.7	0.3	} 2.6	1.4
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	..do.....	} (NA)	2.3		
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	..do.....				
333401	Aluminum and aluminum-base alloy refinery shapes.....	1,000 short tons.	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
	Castings (rough and semifinished):					
332011	Iron (gray and malleable).....	..do.....	-	-	( <sup>1</sup> )	( <sup>1</sup> )
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	8.9	7.4	2.0	1.0
	Electric motors and generators (under 1 hp.):					
362110	Timing motors, synchronous and subsynchronous.....	1,000.....	( <sup>1</sup> )	( <sup>1</sup> )	} 377.0	1.9
362115	Other fractional horsepower electric motors (exclude timing motors).....	..do.....	914.5	5.2		
362120	Integral horsepower electric motors and generators (1 hp. and over).....	..do.....	( <sup>1</sup> )	( <sup>1</sup> )	(NA)	(NA)
260091	Paper and paperboard containers.....	..do.....	(X)	6.4	(X)	3.1
970099	All other materials and components, parts, containers, and supplies consumed.....	..do.....	(X)	72.0	(X)	42.5
976000	Materials, components, parts, containers, and supplies consumed, n.s.k. <sup>2</sup> .....	..do.....	(X)	5.6	(X)	2.7

- Represents zero. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>The value for these materials are included with material code 970099. "All other materials and components, etc." to avoid disclosing the operation of individual companies.<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

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This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3635, these small establishments accounted for approximately 0 percent of payrolls and 0 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





## Appendix

### EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

## 1967 CENSUS OF MANUFACTURES

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture  (million dollars)	Cost of materials  (million dollars)	Value of shipments  (million dollars)	Capital expenditures, new  (million dollars)	All employees  (1,000)	Value added by manufacture  (million dollars)
	Total  (number)	With 20 employees or more (number)	Number  (1,000)	Payroll  (million dollars)	Number  (1,000)	Man-hours  (millions)	Wages  (million dollars)						
INDUSTRY 3636.-SEWING MACHINES													
United States, total.....	86	21	6.4	49.3	4.9	9.7	34.7	95.3	30.0	123.6	5.6	7.6	98.3
Middle Atlantic.....	57	11	4.4	34.4	3.1	6.0	22.2	52.6	20.4	73.3	(D)	4.2	43.7
South.....	7	3	0.1	0.4	0.1	0.2	0.3	0.9	0.4	1.2	(D)	(D)	(D)

Note: Only those regions, divisions, or States are listed that could be shown without disclosing the operations of individual companies, either directly or by subtraction from higher-level totals. Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000 heads)	Value (million dollars)	Quantity (1,000 heads)	Value (million dollars)
3636- --	SEWING MACHINES, TOTAL.....	(X)	116.7	(X)	104.7
36360 21	Sewing machines and parts, excluding cases and cabinets sold separately:				
	Household sewing machines, including heads for sale with cabinets or cases, and heads for sale separately.....	(D)	(D)	(D)	(D)
36360 71	Industrial sewing machines (except shoe sole stitching machines).....	99.8	49.3	121.2	47.7
36360 81	Sewing machine parts, and attachments for household and industrial sewing machines (except cases and cabinets).....	(X)	<sup>1</sup> 61.5	(X)	<sup>1</sup> 53.9
36360 00	Sewing machines, n.s.k. (Represents principally establishments with 10 or more in 1967. See Note).....	(X)	3.5	(X)	} 3.1
36360 02	Sewing machines, n.s.k. (Represents principally establishments with fewer than 10 employees in 1967. See Note).....	(X)	2.4	(X)	

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(X) Not applicable. (D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher level totals or from related figures.

<sup>1</sup>Includes the value of shipments of household sewing machines.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3636.-SEWING MACHINES					
	Materials, components, parts, containers, and supplies, total,.....		(X)	21.6	(X)	24.2
	Mill shapes and forms (except casting):					
	Carbon steel:					
331011	Bar and bar shapes.....	1,000 short tons..	(NA)	2.0	5.8	1.6
331012	Strip and sheet.....	..do.....	(NA)			
331013	Plates.....	..do.....	(NA)			
331015	Structural shapes.....	..do.....	(NA)			
331017	Wire and wire products.....	..do.....	(NA)			
331019	All other carbon steel mill shapes and forms.....	..do.....	(NA)			
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	..do.....	(NA)	0.2	0.2	0.1
331029	All other alloy steel mill shapes and forms.....	..do.....	(NA)			
331031	Stainless steel.....	..do.....	(NA)			
	Copper and copper-base alloy:					
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	(D)	(D)	(D)	(D)
335123	Plate, sheet, and strip (including military cups and discs) ..	..do.....	-	-	(D)	(D)
335127	Pipe and tube.....	..do.....	-	-	(D)	(D)
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	..do.....	(D)	(D)	(D)	(D)
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	..do.....	-	-	(D)	(D)
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	..do.....	(D)	(D)	(D)	(D)
333401	Aluminum and aluminum-base alloy refinery shapes.....	1,000 short tons..	(D)	(D)	(D)	(D)
	Castings (rough and semifinished):					
332011	Iron (gray and malleable) <sup>1</sup> .....	1,000 short tons..	(D)	(D)	2.3	1.4
336100	Aluminum and aluminum-base alloy <sup>1</sup> .....	Million lbs.....	(D)	(D)	(D)	(D)
	Fractional horsepower electric motors (under 1 hp.):					
362110	Timing motors, synchronous and subsynchronous.....	.....	(D)	(D)	-	-
362115	Other fractional horsepower electric motors (exclude timing motors).....	1,000.....	(D)	(D)	218.3	1.2
260091	Paper and paperboard containers.....	.....	-	-	(X)	(D)
970099	All other materials and components, parts, containers, and supplies consumed <sup>2</sup> .....	.....	(X)	15.0	(X)	13.8
976000	Materials, parts, containers, and supplies consumed, n.s.k. <sup>3</sup> .....	.....	(X)	4.6	(X)	4.6

- Represents zero. (NA) Not available (D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher level totals or from related figures.

<sup>1</sup>Excludes castings produced and consumed in the same establishment.

<sup>2</sup>Includes the cost of materials for detail items which have been withheld to avoid disclosing the operations of individual companies.

<sup>3</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3636, these small establishments accounted for approximately 1 percent of payrolls and 2 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

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More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

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The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

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In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

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A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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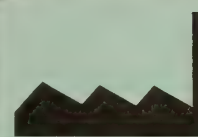
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# 1967 CENSUS OF MANUFACTURES

MC67(P)-36B-7



## INDUSTRY SERIES

### Household appliances, n.e.c.

SIC Code 3639

**preliminary  
report**

The Household Appliances, Not Elsewhere Classified, Industry includes establishments primarily engaged in manufacturing household appliances, not elsewhere classified, such as hot water heaters, dishwashers, and food waste disposal units.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Household Appliances, N.E.C., Industry amounted to \$500.9 million, an increase of 15 percent compared with 1963. Value added by manufacture at \$227.1 million in 1967 was 11

percent more than value added in 1963. Average employment in the industry showed an increase of 8 percent from 1963 to a total of 14.4 thousand employees in 1967.

Of the \$500.9 million total value of shipments and other receipts of establishments classified as household appliances, n.e.c., \$68.8 million were products primary to other industries; and \$15.2 million were receipts for miscellaneous activities. The industry shipments of primary products represented 86 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 79 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)
	INDUSTRY 3639.--HOUSEHOLD APPLIANCES, N.E.C.													
1967 Census....	88	58	14.4	95.6	10.7	21.8	62.7	227.1	277.3	500.9	11.5	79.8	86	81
1966 ASM <sup>1</sup> .....	(NA)	(NA)	12.9	84.7	9.9	20.3	57.2	211.7	242.8	448.9	15.6	65.1	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	13.0	85.1	10.1	20.3	58.8	225.0	253.6	475.7	11.7	64.5	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	13.1	84.3	9.9	19.9	57.5	221.5	248.8	466.8	9.0	61.6	(NA)	(NA)
1963 Census....	112	67	13.1	81.6	9.9	19.9	54.3	204.2	233.1	435.5	6.7	58.1	79	79
1962 ASM <sup>1</sup> .....	(NA)	(NA)	13.2	79.5	9.8	19.6	52.9	172.3	241.7	412.6	7.5	47.9	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	12.2	73.3	8.6	17.4	46.6	141.0	209.7	353.2	*5.6	46.6	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	12.8	75.7	9.2	18.3	46.3	146.9	211.8	357.3	8.3	54.0	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	14.4	81.5	10.0	19.0	49.2	161.7	235.4	399.0	(\$)	56.9	(NA)	(NA)
1958 Census <sup>2</sup> ....	94	71	14.6	79.7	10.1	20.0	47.4	162.7	212.0	378.8	4.4	56.6	79	83

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

(S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued September 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE**    **Maurice H. Stans, Secretary**  
**Rocco C. Siciliano, Under Secretary**  
**BUREAU OF THE CENSUS**



The total value of household appliances, n.e.c., shipped by all producers in 1967 was \$514.9 million of which \$416.9 million, or 81 percent, were shipped by plants classified in industry 3639, Household Appliances, N.E.C., while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 79 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

#### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3639, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-34N, Heating and Cooking Equipment

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3639.--HOUSEHOLD APPLIANCES, N.E.C.													
United States, Total.....	88	58	14.4	95.6	10.7	21.8	62.7	227.1	277.3	500.9	11.5	13.1	204.2
Northeast.....	17	12	1.6	10.0	1.2	2.5	6.7	20.3	26.8	46.3	0.6	1.8	22.6
New York.....	8	4	0.2	1.4	0.2	0.4	0.8	2.6	3.6	6.1	0.1	0.3	3.0
North Central.....	29	18	5.4	41.6	4.0	8.4	27.5	87.8	111.9	200.7	3.4	5.9	88.1
South.....	22	15	4.5	25.7	3.6	7.2	17.9	83.8	90.6	172.3	6.4	2.3	54.7
West.....	20	13	2.8	18.2	1.8	3.8	10.6	35.1	48.0	81.7	1.0	3.1	38.8

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3639 --	HOUSEHOLD APPLIANCES, N.E.C., TOTAL.....		(X)	514.9	(X)	414.6
36391 --	Household water heaters, electric.....		(X)	61.1	(X)	61.4
	Electric water heaters (for permanent installation):					
	Storage type:					
36391 11	34 gallons and under.....	1,000 units...	431.2	13.8	399.7	13.4
36391 12	35 to 44 gallons.....	do.....	400.9	16.1	320.2	14.4
36391 14	45 to 54 gallons.....	do.....	414.7	18.3	360.1	17.4
36391 15	55 gallons and over.....	do.....	151.7	10.3	131.1	8.0
36391 98	Other types, including circulating and portable.....		(X)	2.0	(X)	6.0
36391 00	Electric water heaters, n.s.k.....		(X)	0.6	(X)	2.2
36392 --	Household water heaters, except electric:					
36392 00	As reported in census of manufactures.....		(X)	137.4	(X)	142.2
	As reported on Census annual Form MA-34N.....	1,000 units...	(X)	135.9	(X)	143.3
	Water heaters:					
	Direct-fired water heaters:					
	Gas:					
36392 11	Underfired storage.....	do.....	2,871.8	118.7	3,041.9	127.5
36392 13	Sidearm.....	do.....				
	Oil:					
36392 23	Underfired storage.....	do.....	13.5	2.0	18.8	2.6
36392 25	Sidearm.....	do.....				
36392 31, 33	Coal and wood tank heaters, cast-iron and steel.....	do.....	(Z)	(Z)	0.5	(Z)
	Indirect water heaters:					
	Storage, cast or coil-type (less tank):					
36392 41	20 g.p.h. and less.....	do.....	6.1	0.6	17.5	0.5
36392 43	21 g.p.h. and over.....	do.....				
36392 51	Tanks (with or without generator coils).....	do.....	2.8	3.7	2.9	2.4
36392 55	Instantaneous.....	do.....	174.0	10.0	180.4	8.5
36392 53	Generator coils with tank collar (sold without tank).....	do.....	5.7	1.0	4.0	0.7
36393 --	Other household appliances and parts.....		(X)	294.8	(X)	208.1
	Dishwashing machines:					
36393 12	Portable type, including convertible type.....	1,000 units...	636.0	75.1	287.9	37.9
36393 14	Built-in type.....	do.....	945.8	124.0	609.4	83.9
36393 31	Floor waxing and polishing machines.....	do.....	1,410.3	29.8	1,392.9	29.4
36393 71	Food waste disposers (all sizes).....	do.....	1,498.5	43.5	1,239.3	34.4
36393 81	Other household service machines.....	(X)	(X)	16.3	(X)	13.6
36393 91	Parts and accessories for electric water heaters.....	(X)	(X)	3.3	(X)	8.5
36393 00	Other household type appliances and parts, n.s.k.....	(X)	(X)	2.8	(X)	0.5
36390 00	Household appliances, n.e.c., n.s.k. (Represents principally establishments with 10 employees or more in 1967. See Note).....		(X)	20.0	(X)	2.9
36390 02	Household appliances, n.e.c., n.s.k. (Represents principally establishments with fewer than 10 employees. See Note).....		(X)	1.6		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind. (X) Not applicable. (Z) Less than 0.1 when rounded.



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3639.--HOUSEHOLD APPLIANCES, N.E.C.					
	Materials, parts, containers, and supplies, total.....		(X)	253.2	(X)	215.
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bar and bar shapes.....	1,000 short tons.	(NA)	0.3	0.5	0.1
331012	Sheet and strip.....	..do.....	293.3	41.2	276.3	38.9
331013	Plates.....	..do.....	9.4	1.3	4.4	0.7
331015	Structural shapes.....	..do.....	20.0	6.3	16.2	5.4
331017	Wire and wire products.....	..do.....				
331019	All other carbon steel mill shapes and forms.....	..do.....				
	Alloy steel (except stainless);					
331021	Bars and bar shapes.....	..do.....	4.3	4.6	0.4	0.3
331029	All other alloy steel mill shapes and forms.....	..do.....				
331031	Stainless steel.....	..do.....				
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction).....	Million lbs.....	(D)	(D)	0.3	0.2
335790	Insulated wire and cable.....	Million lbs. (copper content).	1.9	1.8	0.4	0.3
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	3.5	3.2	0.9	0.6
335123	Plate, sheet, and strip (including military cups and discs)	..do.....				
335127	Pipe and tube.....	..do.....				
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	..do.....	1.5	0.8	1.2	0.5
335205	Extruded shapes, including rod, bar, pipe, tube, etc.....	..do.....	1.9	1.3	0.8	0.5
335209	All other aluminum mill shapes and forms (wire, rolled rod, and bar, powder, welded tubing, etc.).....	..do.....				
333401	Aluminum and aluminum-base alloy refinery shapes.....	1,000 short tons.	(D)	(D)	(NA)	(NA)
	Castings (rough and semifinished):					
332011	Iron (gray and malleable).....	..do.....	8.8	4.6	6.1	3.3
3361000	Aluminum and aluminum-base alloy.....	Million lbs.....	4.6	2.6	3.6	2.6
	Electric motors and generators:					
	Fractional horsepower electric motors (under 1 hp.):					
362110	Timing motors, synchronous and subsynchronous.....	1,000.....	2,023.3	4.9	533.7	2.1
362115	Other fractional horsepower electric motors (excluding timing motors).....	..do.....	2,151.0	20.1	2,141.2	13.5
362120	Integral horsepower electric motors and generators (1 hp. and over).....	..do.....	10.6	0.5	(X)	(X)
260091	Paper and paperboard containers.....	..do.....	(X)	10.1	(NA)	6.6
970099	All other materials and components, parts, containers, and supplies consumed.....	..do.....	(X)	107.4	(X)	95.4
976000	Materials, supplies, components, etc., n.s.k.....	..do.....	(X)	41.2	(X)	39.

- Represents zero. (D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher level totals or from figures. (NA) Not available. (X) Not applicable.

<sup>1</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3639, these small establishments accounted for approximately 0.3 percent of payrolls and 0.3 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

### Electric lamps

SIC Code 3641

**preliminary  
report**

The Electric Lamps Industry includes establishments primarily engaged in manufacturing electric bulbs, tubes, and related light sources. Important products of this industry include incandescent filament lamps, vapor and fluorescent lamps, photoflash and photoflood lamps, electrotherapeutic lamp units for ultra-violet and infrared radiation, and other electric light sources. Establishments primarily engaged in manufacturing glass blanks for bulbs are classified in industry 3229; and lamp components, such as supports, filaments, lead-in wire and cold cathode fluorescent lamp electrodes, in industry 3699.

The classification of establishments for which data are tabulated in this report is based upon

the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Electric Lamps Industry amounted to \$781.8 million, an increase of 36 percent compared with 1963. Value added by manufacture at \$537.7 million in 1967 was 48 percent more than value added in 1963. Average employment in the industry showed an increase of 26 percent from 1963 to a total of 29.5 thousand employees in 1967.

Of the \$781.8 million total value of shipments and other receipts of establishments classified as electric lamps, \$47.7 million were products primary to other industries; and \$18.7 million

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3641.--ELECTRIC LAMPS														
1967 Census....	106	65	29.5	169.9	25.8	49.9	136.0	537.7	248.4	781.8	48.2	83.7	94	95
1966 ASM <sup>1</sup> .....	(NA)	(NA)	27.7	160.1	24.3	48.2	129.4	494.8	250.2	742.0	24.1	81.7	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	25.8	144.3	22.5	44.4	117.0	443.3	233.3	672.9	30.1	76.2	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	24.2	131.6	21.0	41.3	105.1	407.7	209.5	615.4	18.1	69.6	(NA)	(NA)
1963 Census....	81	50	23.4	122.7	20.5	40.3	99.5	362.2	207.0	574.5	17.0	63.7	95	96
1962 ASM <sup>1</sup> .....	(NA)	(NA)	22.6	116.3	18.8	38.8	92.6	367.1	184.9	544.9	12.7	68.8	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	21.6	107.7	17.6	36.0	84.0	336.2	168.0	513.2	10.7	59.5	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	23.9	114.1	19.7	39.5	89.9	355.7	169.2	517.4	10.5	69.1	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	22.8	109.9	18.8	39.6	87.2	339.2	165.8	497.3	10.6	61.1	(NA)	(NA)
1958 Census <sup>2</sup> ...	66	52	21.5	95.3	18.2	35.1	73.6	270.5	136.2	417.5	8.3	51.0	94	98

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**

were receipts for miscellaneous activities. The industry shipments of primary products represented 94 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 95 percent in 1963.

The total value of electric lamps shipped by all producers in 1967 was \$750.7 million of which \$715.4 million, or 95 percent, were shipped by plants classified in industry 3641, Electric Lamps,

while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 96 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3641, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MQ-36B, Electric Lamps.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture  (million dollars)	Cost of materials  (million dollars)	Value of shipments  (million dollars)	Capital expenditures, new  (million dollars)	All employees  (1,000)	Value added by manufacture  (million dollars)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
	INDUSTRY 3641.--ELECTRIC LAMPS												
United States, total.....	106	65	29.5	169.9	25.8	49.9	136.0	537.7	248.4	781.8	48.2	23.4	362.2
Northeast.....	50	29	12.7	77.8	10.6	21.2	57.9	208.2	96.0	300.9	10.5	(D)	(D)
North Central: Illinois.....	11	5	1.7	9.0	1.5	2.8	7.4	28.5	11.3	39.6	(D)	(D)	(D)
West.....	8	4	0.2	1.1	0.2	0.4	0.9	2.4	0.6	3.0	0.1	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	1967			1963		
		Production for all purposes (million bulbs)	Total shipments, including interplant transfers		Production for all purposes (million bulbs)	Total shipments, including interplant transfers	
			Quantity (million bulbs)	Value (\$1,000)		Quantity (million bulbs)	Value (\$1,000)
3641- --	ELECTRIC LAMPS, TOTAL.....	(X)	(X)	750.7	(X)	(X)	545.9
36410 --	Electric lamps (bulbs only), including sealed beam lamps:						
	Electric lamps (bulbs only):						
36410 10	As reported in the census of manufactures.....	(X)	(X)	<sup>1</sup> 750.7	(X)	(X)	<sup>1</sup> 545.9
	As reported on Census Quarterly Form M36B.....	(X)	(X)	742.8	3,060.3	3,017.2	551.0
	Photographic incandescent, total.....	1,503.5	1,468.7	131.0	718.2	714.6	63.8
	Photoflash, including blue, total.....	1,486.3	1,454.3	104.1	707.6	704.3	47.5
36410 21	Screw base.....				3.8	3.3	0.5
36410 22	Midget.....	127.7	127.1	10.3	186.9	195.8	14.9
36410 23	Miniature.....	302.3	300.7	22.3	188.9	191.4	12.9
36410 27	All glass (AG-1).....	1,056.3	1,026.4	71.5	328.0	313.8	19.1
36410 28	Projection-bulk packed.....	2.7	2.8	5.4	1.7	1.6	3.1
36410 29	Projection-all other.....	7.8	6.8	15.4	4.6	4.5	9.2
36410 25	Photoflood, photo-enlarger, and other photolamps.....	6.7	4.8	6.1	4.2	4.2	4.0
	Large incandescent, except photographic and Christmas tree, total.....	1,390.6	1,398.4	263.3	1,253.5	1,236.3	216.5
	General lighting:						
	15-150 watts, 100 to 130 volts:						
36410 08	White lamps.....	240.5	247.3	35.2	163.1	156.2	20.5
36410 09	All other.....	745.4	747.3	87.8	746.3	734.6	84.7
36410 12	Above 150 watt, 100 to 130 volts.....	63.3	65.0	18.4	62.3	61.3	17.7
36410 13	3-light, 100 to 130 volts.....	38.5	39.4	11.8	34.0	33.7	10.0
	Reflector, 100 to 130 volts, total.....	37.7	37.1	35.8	30.2	29.1	28.4
36410 14	Par type (pressed glass).....	19.8	20.2	22.9	16.1	15.5	17.5
36410 19	R type (blown glass).....	17.9	17.0	12.9	14.1	13.6	10.9
36410 15	Infrared (all types, including quartz) 100 to 130 volts..	4.3	4.0	5.8	5.4	4.4	4.8
36410 16	Traffic and street lighting, 100 to 130 volts.....	12.9	13.7	4.4	14.4	15.4	5.3
36410 17	Rough and vibration service, 100 to 130 volts.....	31.5	31.7	7.5	28.8	28.4	6.5
36410 18	All other large incandescent (special purpose).....	216.6	213.0	56.5	169.0	173.1	38.8
	Miniature incandescent, total.....	830.0	839.1	123.8	674.1	653.9	94.4
	Automobile glass and metal sealed beams:						
	Under 6 inches.....	56.2	57.8	37.0	54.5	52.6	31.2
36410 30	Bulk packed.....	32.5	34.0	20.5		32.0	18.1
36410 31	All other.....	23.7	23.8	16.6	54.5	20.6	13.1
	6 inches and over.....	16.9	17.3	13.0	24.1	22.7	16.0
36410 32	Bulk packed.....	5.4	5.7	4.0		5.6	3.6
36410 37	All other.....	11.5	11.6	9.0	24.1	17.1	12.4
	Automobile miniature other than glass and metal sealed beams.....	496.5	517.7	38.2	414.6	405.6	29.1
36410 33	Bulk packed.....	309.2	327.4	21.6		257.1	16.8
36410 36	All other.....	187.3	190.3	16.5	414.6	148.6	12.3
36410 34	Flashlight.....	75.4	69.4	3.7	68.2	65.8	3.6
36410 35	Radio panel.....	54.2	57.2	2.6	48.4	48.0	2.3
36410 39	All other miniatures.....	130.8	119.7	29.3	64.3	59.2	12.2
	Electrical discharge, except Christmas tree, total.....	315.1	322.5	209.4	246.0	241.4	166.9
36410 41	Germicidal, sterile, bacterial, and ozone.....	0.8	0.6	1.1	1.2	1.0	1.1
36410 42	Sun lamps bulbs.....	0.8	0.7	3.2	0.4	0.4	1.7
	Fluorescent, hot cathode, total.....	224.1	233.8	166.5	179.0	175.2	139.3
36410 43	Slimline.....	41.4	41.2	40.7	32.5	31.7	37.8
36410 46	Circular.....	6.6	5.9	9.3	5.1	5.0	7.9
36410 49	High output 800 milliamps and over.....	14.0	14.4	23.4	8.2	7.8	16.1
36410 44	Other fluorescent lamps, below 40 watts.....	36.5	38.0	22.2	32.2	31.0	17.8
36410 45	Other fluorescent lamps, 40 watt and over.....	125.7	134.3	71.0	101.0	99.7	59.7
	Miscellaneous electrical discharge, total.....	89.3	87.3	38.6	65.3	64.8	24.8
36410 51	Glow.....	84.1	82.8	7.4	63.0	62.6	5.8
36410 52	General lighting high intensity lamps.....	5.1	4.4	27.6	2.2	2.1	17.3
36410 53	Sodium, photochemical and other miscellaneous electrical discharge.....	0.1	0.1	3.6	(Z)	(Z)	1.7
36410 55	Christmas tree lamps (all types).....	251.5	245.6	15.3	168.5	171.1	9.2
36410 63	Cold cathode fluorescent lamps for illumination and decoration, including custom built lamps, but excluding sign applications..	(X)	(X)	( <sup>1</sup> )	(X)	(X)	( <sup>1</sup> )

(X) Not applicable. (Z) Less than 0.1 when rounded.

<sup>1</sup>Product code 3641063, cold cathode fluorescent lamps, etc., are included with product code 3641010, electric lamps (bulbs only), as reported in the census of manufactures. Product code 3641063 was negligible in 1967 and was revised to \$547 in 1963.

## 1967 CENSUS OF MANUFACTURES

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3641.--ELECTRIC LAMPS					
	Materials, components, parts, containers and supplies, total .....		(X)	227.6	(X)	184.0
	Mill shapes and forms (except castings):					
	Copper and copper-base alloy:					
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	1,000 lbs.....	(NA)	0.8	1.4	1.4
335123	Plate, sheet, and strip, including military cups and discs..	do.....				
335127	Pipe and tube.....	do.....				
335728	Bare wire (for electrical conduction only).....		-	-	(D)	(D)
335790	Insulated wire and cable.....		-	-	(D)	(D)
260091	Paper and paperboard containers.....		(X)	20.1	(X)	15.5
970099	All other materials, parts, containers and supplies consumed....		(X)	190.6	(X)	161.3
973000	Materials, parts, containers and supplies, n.s.k.....		(X)	16.1	(X)	5.7

- Represents zero.

(NA) Not available.

(D) Included with material code 970099 "all other materials etc." to avoid disclosing operation of individual companies.

n.s.k. Not specified by kind.

(X) Not applicable.

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3641, these small establishments accounted for less than 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

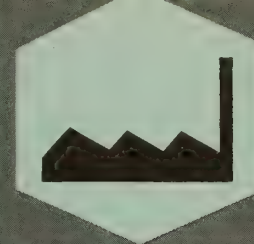
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-36C-2

INDUSTRY SERIES

## Lighting fixtures

SIC Code 3642

**preliminary  
report**

The Lighting Fixtures Industry includes establishments primarily engaged in manufacturing lighting fixtures and equipment of any type, including electric and gas lighting fixtures; carbide, kerosene, and gasoline lamps; and metal reflectors and fittings. Establishments primarily engaged in producing glassware for lighting fixtures are classified in Major Group 32; and electric light bulbs, tubes, and related light sources in industry 3641.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Lighting Fixtures Industry amounted to \$1,602.2 million, an increase of 38 percent compared with 1963. Value added by manufacture at \$832.6 million in 1967 was 42 percent more than value added in 1963. Average employment in the industry showed an increase of 20 percent from 1963 to a total of 64.9 thousand employees in 1967.

Of the \$1,602.2 million total value of shipments and other receipts of establishments classified as lighting fixtures, \$78.9 million were products primary to other industries; and \$66.4 million

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3642.--LIGHTING FIXTURES														
1967 Census . . .	1,215	526	64.9	389.6	50.2	99.2	253.8	832.6	773.5	1,602.2	32.9	248.7	95	94
1966 ASM <sup>1</sup> . . . . .	(NA)	(NA)	64.7	375.6	50.9	100.0	248.0	782.4	848.5	1,544.1	40.2	251.4	(NA)	(NA)
1965 ASM <sup>1</sup> . . . . .	(NA)	(NA)	61.6	353.4	48.6	97.5	237.2	742.7	699.7	1,425.4	39.3	190.7	(NA)	(NA)
1964 ASM <sup>1</sup> . . . . .	(NA)	(NA)	56.9	313.5	44.1	79.2	204.8	621.9	635.9	1,250.7	28.0	170.2	(NA)	(NA)
1963 Census . . . . .	1,239	480	53.9	288.1	42.1	83.3	193.5	587.8	578.1	1,159.5	23.1	157.1	93	93
1962 ASM <sup>1</sup> . . . . .	(NA)	(NA)	51.9	272.2	41.1	80.1	180.2	548.7	566.9	1,107.3	15.2	144.5	(NA)	(NA)
1961 ASM <sup>1</sup> . . . . .	(NA)	(NA)	49.8	249.1	39.3	75.7	165.0	476.8	506.7	984.2	12.2	132.4	(NA)	(NA)
1960 ASM <sup>1</sup> . . . . .	(NA)	(NA)	51.8	249.2	41.0	80.6	167.2	468.0	516.3	978.0	15.2	132.9	(NA)	(NA)
1959 ASM <sup>1</sup> . . . . .	(NA)	(NA)	51.2	244.4	40.5	80.0	162.8	452.3	497.6	946.1	15.0	127.8	(NA)	(NA)
1958 Census <sup>2</sup> . . . . .	1,181	431	47.3	215.8	36.4	71.6	143.8	397.4	419.9	826.6	14.4	116.3	91	94

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued December 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

Harold C. Passer, Assistant Secretary for Economic Affairs

BUREAU OF THE CENSUS George Hay Brown, Director

were receipts for miscellaneous activities. The industry shipments of primary products represented 95 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 93 percent in 1963.

The total value of lighting fixtures shipped by all producers in 1967 was \$1,542.9 million of which \$1,456.9 million, or 94 percent, were shipped by plants classified in industry 3642, Lighting Fixtures, while the remainder was shipped by plants

classified in other industries. This percent, called the coverage ratio, was 93 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

#### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3642, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-36L, Electric Lighting Fixtures.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3642.--LIGHTING FIXTURES													
United States, total.....	1,215	526	64.9	389.6	50.2	99.2	253.8	832.6	773.5	1,602.2	32.9	53.9	587.8
New England.....	80	38	4.3	24.8	3.4	6.8	16.3	51.5	47.5	99.9	3.4	3.9	35.2
Rhode Island.....	6	4	0.2	1.0	0.2	0.4	0.6	1.4	1.7	3.2	(Z)	(D)	(D)
Middle Atlantic.....	477	213	20.5	114.0	16.2	31.3	74.3	236.9	235.0	467.5	6.9	17.6	177.4
New York.....	294	102	8.7	50.6	6.8	12.9	31.9	102.2	94.7	195.6	3.3	7.7	77.3
New Jersey.....	93	52	5.3	30.2	4.0	8.0	19.2	62.4	63.7	122.6	1.1	3.9	46.1
Pennsylvania.....	90	59	6.6	33.2	5.3	10.4	23.1	72.3	76.6	149.4	2.5	6.0	54.0
East North Central....	234	119	20.3	137.8	15.7	31.5	92.0	277.0	236.4	515.0	11.2	18.9	212.9
Ohio.....	52	30	5.5	36.2	4.2	8.4	24.3	74.3	76.4	152.4	3.3	5.2	58.3
Illinois.....	128	68	6.8	40.0	5.3	10.6	24.7	76.5	76.8	153.3	1.4	6.6	63.1
Michigan.....	21	7	1.0	5.8	0.8	1.6	4.1	10.3	11.1	21.8	(D)	1.1	11.2
West North Central....	43	19	2.0	12.3	1.5	3.0	7.5	24.3	21.9	46.3	0.7	1.8	18.3
Minnesota.....	7	3	0.2	1.7	0.2	0.4	1.1	4.6	3.3	7.9	(D)	0.1	2.1
Missouri.....	26	14	1.7	10.3	1.2	2.5	6.1	19.0	17.8	37.0	0.5	1.6	15.5
South Atlantic.....	61	25	4.9	28.1	3.6	7.5	17.1	74.7	74.4	150.3	4.5	2.5	36.8
Florida.....	26	8	0.7	3.3	0.6	1.1	2.4	7.8	5.0	12.9	(D)	0.3	2.0
East South Central....	21	13	3.6	16.9	2.9	5.8	11.9	50.7	55.0	105.1	1.5	2.1	27.6
West South Central....	46	11	1.3	7.1	0.9	1.8	4.1	17.6	16.3	33.5	0.6	0.8	11.0
Texas.....	30	9	0.9	5.3	0.6	1.2	2.7	12.1	12.6	25.0	0.6	0.5	7.2
Mountain.....	13	3	0.4	2.3	0.3	0.5	1.4	5.5	4.4	9.6	0.2	0.2	2.0
Pacific.....	240	85	7.5	46.4	5.7	10.9	29.4	94.4	82.7	174.8	3.9	6.1	66.5

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.



## 1967 CENSUS OF MANUFACTURES

TABLE 3. Value of Shipments by All Producers: 1967 and 1963

(Includes value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Value of shipments including interplant transfers (million dollars)	
		1967	1963
3642- --	LIGHTING FIXTURES.....	1,542.9	1,116.1
36421 --	Residential type electric fixtures, except portable:		
36421 00	As reported in the census of manufactures.....	202.9	158.8
	As reported on the Census Annual Form MA-36L.....	186.2	153.6
	Incandescent (excluding portable lamps, PAR lampholders and floodlights):		
	Interior (including bath or kitchen):		
36421 11	Ceiling or pendant.....	114.6	103.0
36421 13	Wall or bracket.....	25.6	16.5
	Outdoor:		
36421 15	Designed for attachment to house.....	22.0	17.0
36421 17	Not designed for attachment to house (garden, patio, yard).....	11.0	7.4
36421 61	Fluorescent (except portable).....	13.0	9.7
36422 --	Commercial and institutional type electric fixtures:		
36422 00	As reported in the census of manufactures.....	415.6	299.2
	As reported on Census Annual Form MA-36L.....	395.1	302.4
	Incandescent fixtures:		
	Utilitarian and ornamental types, except portable (primarily for public buildings, banks, stores, office buildings, schools, auditoriums, churches, theaters, etc.):		
36422 11	Surface or pendant.....	31.5	27.7
36422 15	Recessed.....	33.6	24.5
36422 18	Specialized custom lighting fixtures, chandeliers, church lighting, etc. (except portable).	10.0	9.0
36422 19	Other incandescent fixtures, such as interior display, portable lamps, and PAR lampholders.	17.7	20.6
	Fluorescent (except portable):		
36422 51	Recessed air handling.....	22.7	19.4
36422 53	Recessed nonair handling.....	90.9	44.5
36422 54	Striplights.....	48.4	33.4
36422 55	Luminous or louvered ceiling systems (including integrated ceiling systems).....	7.5	11.6
36422 56	Surface and plastic wraparound.....	44.9	
36422 58	Surface and pendant, metal or plastic louvered.....	34.0	109.0
36422 59	All other.....	50.9	
36422 61	Indoor signs, (including electro-luminescence, exit, directional, etc.).....	3.0	2.7
36423 --	Industrial type electric fixtures:		
36423 00	As reported in the census of manufactures.....	129.6	76.1
	As reported on Census annual Form MA-36L.....	118.0	77.9
	Incandescent:		
36423 11	General lighting (except portable).....	11.3	7.7
36423 15	Other industrial types (except portable) such as explosion-proof, vapor-proof, etc.....	17.4	8.7
36423 21	Portable.....	3.9	3.5
	Fluorescent:		
36423 13	General lighting (except portable).....	65.8	50.6
36423 17	Other industrial types (including portable) such as explosion-proof, vapor-proof, etc.....	7.3	5.3
36423 14	Mercury (general lighting).....	12.1	2.1
36424 --	Vehicular lighting equipment, electric:		
36424 00	As reported in the census of manufactures.....	229.1	157.4
	As reported on Census Annual Form MA-36L.....	221.7	157.4
	Motor vehicle incandescent lighting equipment:		
	Spot, fog, and auxiliary equipment:		
36424 11	Shipped to motor vehicle manufacturers.....		5.0
36424 15	Shipped to other than motor vehicle manufacturers.....	6.2	4.2
	Other motor vehicle lighting equipment (excluding bulbs, parking lights, dome lights, tail-lights, etc.):		
36424 21	Shipped to motor vehicle manufacturers (auto, truck, bus, trailer, etc.).....	161.4	124.3
36424 25	Shipped to other than motor vehicle manufacturers.....	18.5	8.0
36424 29	Other than motor vehicle lighting equipment (including fluorescent fixtures, such as aircraft, watercraft, railway locomotives, railroad cars, street cars, etc.).....	35.6	15.9
36425 --	Outdoor lighting equipment:		
36425 00	As reported in the census of manufactures.....	191.4	134.8
	As reported on Census Annual Form MA-36L.....	175.8	131.5
	Street and highway lighting luminaries (including bridge and tunnel lighting):		
36425 11	Incandescent (filament and quartz iodine).....	2.6	7.4

See footnotes at end of table.

TABLE 3. Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Value of shipments including interplant transfers (million dollars)	
		1967	1963
3642- --	LIGHTING FIXTURES--Continued		
	Outdoor lighting equipment--Continued		
	Mercury and other discharge types, including integrally-mounted ballasts:		
36425 13	Open.....	14.7	11.9
36425 14	Enclosed.....	35.5	23.6
36425 15	Fluorescent.....	4.9	6.1
	Area and sports lighting luminaries:		
	Floodlights (excluding PAR lampholders) (including service station floodlights, under water, fountain, and swimming pool):		
36425 17	Incandescent, filament.....	8.4	8.9
36425 18	Incandescent, quartz iodine.....	5.7	2.7
36425 19	Mercury and other discharge types (including integrally-mounted ballasts).....	19.3	8.0
36425 21	Fluorescent.....	12.7	10.7
	Post top decorative area lighting fixtures (including PAR lampholders):		
36425 23	Incandescent (filament and quartz iodine).....	2.4	1.5
36425 25	Mercury and other discharge types (including integrally-mounted ballasts).....	4.5	1.3
36425 27	Fluorescent.....		4.5
36425 31	Aviation ground lighting equipment (for fixed based airports):		
	Runway approach lighting (including fixtures, regulators, insulating transformers, isolating lamp transformers, beacons, wind tees and cones).....	3.0	2.5
36425 33	Runway (except runway approach), taxiway and ramp light (including fixtures, regulators, and isolating lamp transformers).....	4.7	1.8
	Poles, standards, newels, brackets, and accessories:		
	For street and highway lighting:		
36425 35	Metal, concrete, and integral brackets.....	26.7	21.1
36425 37	Wood pole brackets.....	2.4	2.2
36425 39	For area and sports lighting.....	9.3	3.4
36425 41	For other outdoor lighting.....	5.2	5.2
	Other floodlighting and area lighting equipment:		
36425 43	Spotlights (including indoor and stage, excluding vehicular).....	7.5	4.5
36425 45	All other floodlighting and area lighting equipment.....	6.3	4.2
36426 --	Other electric and nonelectric lighting equipment (including hand portable equipment) and parts and accessories.....	116.2	84.7
36426 11	Flashlights and flashlight lanterns (one to five cells).....	30.7	20.1
36426 19	Other, such as miners' lights, emergency warning lights, generator flashlights, etc.....	12.1	6.0
36426 21	Other electric lighting equipment, including electrical discharge such as mercury vapor (other than street and highway lighting equipment), sodium vapor etc. excluding signs.....	4.3	5.3
36426 31	Other incandescent electric lighting equipment including marine markers or beacons, railway and other vehicular route lighting equipment, parts and accessories such as reflectors, etc., but excluding wire devices sold separately.....	12.2	11.1
36426 71	Parts and accessories for fluorescent lighting equipment, excluding tubes, ballasts, starting switches, and lampholders (including reflectors, etc.).....	7.7	7.5
36426 75	Other fluorescent lighting equipment, complete units, including processing and technical equipment.....	18.3	8.8
	Nonelectric lighting equipment, including parts:		
36426 81	Kerosene and gasoline lamps and lanterns.....	13.6	8.2
36426 85	Parts and accessories for nonelectric lighting equipment, including reflectors and fittings, incandescent mantles, etc.....	4.7	6.2
36426 89	Other nonelectric lighting fixtures and equipment, complete units, including carbide lamps of all types.....	0.9	3.3
36426 91	Ultraviolet and infrared health lamp fixtures, excluding lamp bulbs sold separately.....	0.3	1.1
36426 00	Other electric and nonelectric lighting equipment (including hand portable equipment) and parts and accessories, n.s.k.....	11.4	7.1
36427 --	Residential type electric fixtures (portable).....	161.0	160.2
	Incandescent portable lamps, complete:		
	Complete with shade:		
36427 21	Floor, bridge, and torch lamps.....	36.2	36.1
36427 22	Wall lamps, including adjustable types.....	9.2	5.1
36427 23	Table lamps.....	69.1	70.7
36427 29	Other, including boudoir.....	15.9	16.0
36427 32	Lamps sold without shades, including floor, bridge, table, etc.....	5.8	5.7

See footnotes at end of table.

## 1967 CENSUS OF MANUFACTURES

TABLE 3. Value of Shipments by All Producers: 1967 and 1963--Continued

(Includes value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Value of shipments including interplant transfers (million dollars)	
		1967	1963
3642- --	LIGHTING FIXTURES--Continued		
	Residential type electric fixtures (portable)--Continued		
36427 61	Portable lamps (desk, etc.) fluorescent.....	11.6	10.5
36427 00	Residential type electrical fixtures (portable), n.s.k.....	13.2	16.2
36420 00	Lighting fixtures, n.s.k. (Represents establishment with 10 or more employees in 1967. See Note.)	67.1	44.9
36420 02	Lighting fixtures, n.s.k. (Represents establishments with less than 10 employees in 1967. See Note.).....	30.0	

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind.      Revised.



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3642.--LIGHTING FIXTURES					
	MATERIALS, COMPONENTS, PARTS, CONTAINERS AND SUPPLIES, TOTAL.....		(X)	705.1	(X)	538.8
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons..	11.5	1.8	4.1	0.9
331012	Sheet and strip.....	..do.....	293.9	47.4	247.7	39.5
331017	Wire and wire products.....	..do.....	15.4	3.9	3.6	1.1
331015	Structural shapes.....	..do.....	9.3	1.5	4.3	0.9
331013	Plates.....	..do.....	4.7	0.5	32.2	3.7
331019	All other carbon steel mill shapes and forms.....	..do.....	7.8	1.8	21.6	4.3
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	..do.....	0.2	0.3	0.2	0.2
331029	All other alloy steel mill shapes and forms.....	..do.....	6.4	4.2	5.4	3.1
331031	Stainless steel.....	..do.....	3.4	3.5	2.2	2.2
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction).....	Million lbs.....	5.4	3.4	2.7	1.5
335790	Insulated wire and cable.....	Million lbs.....				
	(copper content).....		15.0	8.4	10.1	6.7
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	1.3	0.9	1.5	0.9
335123	Plate, sheet and strip, including military cups and discs.....	..do.....	4.0	3.0	5.2	3.1
335127	Pipe and tubes.....	..do.....	3.5	3.3	2.5	2.2
	Aluminum and aluminum-base alloy:					
335202	Sheet plate and foil.....	..do.....	21.5	9.6	21.3	10.6
335205	Extruded shapes including extruded rod, bar, pipe, tube, etc. ....	..do.....	19.6	9.4	10.0	4.9
335209	All other aluminum mill shapes and forms (wired, rolled and bar, powder, welded tubing, etc.).....	..do.....	4.8	2.4	2.3	1.2
333401	Aluminum and aluminum-base alloy refinery shapes.....	1,000 short tons..	4.3	2.2	4.8	2.3
	Castings (rough and semifinished): <sup>1</sup>					
332011	Iron (gray and malleable).....	..do.....	17.1	6.0	5.2	1.9
332300	Steel.....	..do.....	5.9	3.8	3.0	1.9
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	33.1	19.2	7.7	5.9
336200	Copper and copper-base alloy.....	..do.....	2.1	1.9	1.8	1.6
282130	Thermoplastic resins, including modified resins (includes resin content of vinyls and dry bases for cellulose, polyethylenes, polypropylenes, styrenes, etc. Includes granules, pellets, powder, liquid, etc. and excludes sheets, rods, tubes and other shapes).....	Million lbs. (dry basis).....	30.1	11.0	12.2	5.6
282140	Thermosetting resins (melamines, phenolics, polyesters, ureas, etc.). Includes granules, pellets, powder, liquid, etc. and excludes sheets, rods, tubes, and other shapes.....	..do.....	3.9	1.8	3.7	1.5
970099	All other materials and components, parts, containers, and sup- plies consumed.....		(X)	394.1	(X)	308.1
976000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> .....		(X)	159.8	(X)	123.0

n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>No data are available on the quantities of castings produced and consumed in the same establishment.<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3642, these small establishments accounted for approximately 1 percent of payrolls and 2 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

**Textile mill products • Apparel and leather • Chemicals, rubber, and plastics • Machinery and equipment • Primary metals • Intermediate metal products • Processed foods • Lumber, furniture, and paper products • Stone, clay, and glass products.**

A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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# 1967 CENSUS OF MANUFACTURES



MC67(P)-36C-3

## INDUSTRY SERIES

### Current carrying wiring devices

SIC Code 3643

### preliminary report

The Current Carrying Wiring Devices Industry includes establishments primarily engaged in manufacturing current carrying wiring devices. Important products of this industry include attachment plugs and caps, convenience outlets, lamp sockets and receptacles, snap switches, conductor connectors, overhead trolley line material, rail bonds for both propulsion and signal circuits, lightning arrestors, and other lightning protective equipment.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classi-

fied in the Current Carrying Wiring Devices Industry amounted to \$891.9 million, an increase of 44.8 percent compared with 1963. Value added by manufacture at \$538.2 million in 1967 was 51.3 percent more than value added in 1963. Average employment in the industry showed an increase of 21.5 percent from 1963 to a total of 43.0 thousand employees in 1967.

Of the \$891.9 million total value of shipments and other receipts of establishments classified as current carrying wiring devices, \$202.6 million were products primary to other industries; and \$46.6 million were receipts for miscellaneous activities. The industry shipments of primary products represented 76 percent of the total

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)
INDUSTRY 3643.--CURRENT CARRYING WIRING DEVICES														
1967 Census....	387	196	43.0	248.8	33.2	65.5	164.5	538.2	354.0	891.9	34.4	169.2	76	86
1966 ASM <sup>1</sup> .....	(NA)	(NA)	39.4	218.0	31.3	60.8	145.5	497.6	339.9	811.3	34.2	152.4	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	36.8	194.7	28.7	56.5	129.2	432.8	295.9	708.2	25.9	130.0	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	35.9	183.9	27.2	53.2	118.7	401.4	280.9	673.2	16.8	133.7	(NA)	(NA)
1963 Census....	449	180	35.4	175.2	27.2	53.5	115.1	355.6	257.2	161.0	14.1	99.5	80	83
1962 ASM <sup>1</sup> .....	(NA)	(NA)	40.6	189.6	32.0	63.1	125.8	386.7	269.1	649.8	14.9	105.3	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	41.5	196.0	31.8	62.8	124.9	388.5	267.3	639.5	15.5	102.6	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	41.9	187.3	32.3	62.8	115.3	371.4	256.5	625.6	18.0	96.0	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	41.3	179.2	33.0	63.6	118.5	371.8	253.3	611.1	14.0	110.5	(NA)	(NA)
1958 Census <sup>2</sup> ...	423	161	35.7	156.0	26.6	51.6	100.2	300.8	197.9	501.3	9.6	84.5	87	79

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

Harold C. Passer, Assistant Secretary for Economic Affairs

BUREAU OF THE CENSUS George Hay Brown, Director

manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 80 percent in 1963.

The total value of current carrying wiring devices shipped by all producers in 1967 was \$745.6 million of which \$642.7 million, or 86 percent, were shipped by plants classified in industry 3643, Current Carrying Wiring Devices, while the remainder was shipped by plants

classified in other industries. This percent, called the coverage ratio, was 83 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3643, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-36K, Wiring Devices and Supplies.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
	INDUSTRY 3643.--CURRENT CARRYING WIRING DEVICES												
United States, total.....	387	196	43.0	248.8	33.2	65.5	164.5	557.4	367.8	924.9	35.1	35.4	355.6
New England.....	63	40	13.8	80.7	10.7	20.9	55.7	175.5	120.0	295.3	11.0	12.3	116.5
Massachusetts.....	28	18	5.0	28.1	3.6	7.2	18.5	67.8	56.3	124.2	(D)	3.0	28.7
Middle Atlantic.....	124	63	13.8	77.8	10.9	21.5	50.3	161.9	122.1	285.0	7.9	11.8	111.7
New York.....	66	37	8.0	43.1	6.3	12.2	28.4	77.9	67.9	145.6	4.4	7.0	53.9
New Jersey.....	34	14	2.8	16.8	2.3	4.5	9.7	31.5	24.8	56.6	1.0	2.5	21.4
Pennsylvania.....	24	12	2.9	17.8	2.3	4.7	12.1	52.4	29.4	82.8	2.5	2.3	36.4
Illinois.....	32	169	5.3	32.5	3.8	7.4	19.6	77.5	32.7	109.0	4.1	4.9	54.5
West South Central.....	11	6	0.5	2.2	0.4	0.8	1.5	4.1	2.0	6.0	(D)	(D)	(D)
West.....	47	16	1.7	10.3	1.3	2.8	6.9	19.1	9.7	28.3	1.3	1.2	13.5

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3643- --	CURRENT CARRYING WIRING DEVICES.....	.....	(X)	745.6	(X)	561.8
36430 --	Current carrying wiring devices, including lightning rods:					
36430 00	As reported in the census of manufactures.....	.....	(X)	745.6	(X)	561.8
	As reported on census annual Form MA-36K.....	.....	(X)	677.0	(X)	530.2
	Lampholders:					
	Incandescent (Threaded and lumitive only):					
36430 01	Metal outer shell lampholders, key, keyless, push through and pull types--medium size only (excluding outer box type and socket interiors).....	1,000 units...	68.7	10.5	66.9	11.0
36430 02	Outlet box lampholders, pull and keyless types--medium size only.....	...do.....	5.0	1.8	11.1	3.0
36430 03	All other lampholders (including lumiline, weatherproof, temporary, socket interiors, etc.) All sizes.....	...do.....	252.3	24.0	207.0	18.2
36430 05	Fluorescent (all types).....	...do.....	164.6	13.1	135.3	12.0
	Convenience and power outlets:					
	Flush (all types, designed for mounting in switch or outlet boxes):					
36430 11	15 amperes and under (nonlocking type).....	...do.....	108.7	23.5	90.6	18.8
36430 12	15 amperes and under (locking type).....	...do.....	0.9	1.0		
36430 13	Over 15 amperes (nonlocking type).....	...do.....	24.9	9.3		
36430 15	Over 15 amperes (locking type).....	...do.....	2.1	3.2	21.1	8.4
36430 17	Appliance and special application outlets (installed generally as a component part of an electrical appliance or piece of electrical equipment).....	...do.....	35.5	6.0	18.9	3.1
36430 14	Surface raceway outlets.....	...do.....	46.5	11.7	39.4	6.3
36430 19	Surface (except raceway) outlets, and all other outlets (including pin and sleeve, and circuit breaking types).....	...do.....				
	Attachment plug caps, connector bodies, and motor bases, adapters, and miscellaneous current taps:					
36430 21	Nonlocking type.....	.....	(X)	27.7	(X)	25.2
36430 22	Locking type.....	1,000 units...	13.9	10.1		
	Switches (except knife, time, solenoid, automotive and aircraft):					
36430 23	Electric range and oven controls (infinite and stop).....	...do.....	9.6	4.2	89.9	55.5
36430 24	All other appliances and specific application switches and variable speed controls (installed generally as a component part of an electrical appliance or piece of electrical equipment, except precision snap acting switch type).....	...do.....	108.2	75.6		
	General purpose flush switches (designed for mounting in switch or outlet boxes):					
36430 25	15 amperes and under (except incandescent dimmers).....	...do.....	56.7	17.8	65.1	17.0
36430 26	Incandescent dimmers, 15 amperes and under.....	...do.....	12.2	8.3	11.0	5.2
36430 27	Over 15 amperes (all types).....	...do.....				
36430 36	Precision (1/8" gap or less) snap-acting switches, excluding limit switches.....	...do.....	66.7	67.8	44.4	47.8
36430 39	All other (including incandescent dimmers, 15 amperes and under low voltage remote control, surface, canopy, fixture, and portable lamp switches-except knife, time, solenoid, and automotive switches).....	.....	97.1	20.4	(NA)	15.0
	Fluorescent starters:					
36430 52	Cartridge (replaceable).....	...do.....	78.0	7.1	78.6	8.4
36430 53	Push-button momentary contract switch.....	...do.....				
36430 61	Lightning arrestors for AC power transmission systems and substations 5MA series 2.5KA and 1.5KA.....	.....	(X)	18.6	(X)	25.0
36430 62	Light arrestors for AC power distribution systems and substations 5MA series 2.5KA and 1.5KA.....	.....	(X)	17.7		
36430 69	Choke coils and all other protective devices, n.e.c. (including devices for railway signaling power circuit).....	.....	(X)	5.0		
36430 73	Rail bonds for both propulsion and signal circuits.....	.....	(X)	2.0	(X)	1.7
36430 75	Metal contacts, precious and other.....	Billion units.	4.9	57.9	3.9	46.7

See footnotes at end of table.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3643- --	CURRENT CARRYING WIRING DEVICES--Continued					
36430 --	Current carrying wiring devices, including lightning rods--Con. As reported on census annual Form MA-36K--Continued					
	Wire connectors (include connectors used under national electrical applications):					
36430 82	Pressure Connectors, where pressure is applied by screw, cone or other mechanical device.....	1,000 units...	397.3	49.9	}	(NA) 86.0
36430 83	Compression connectors: uninsulated terminals and splicers, tool installed.....	...do.....	905.5	39.3		
36430 84	Preinsulated terminals and splicers, tool installed.....	...do.....	784.1	26.2		
36430 86	Branded or strip terminals and splicers, machine installed..	...do.....	3,692.9	28.9		
36430 87	Pigtail connectors (including wire nuts).....	...do.....	414.6	3.9		
36430 88	Blade or pin type, separable terminations and splicers.....	...do.....	565.8	9.5	}	(NA) 46.9
36430 89	Other wire connectors, n.e.c. (including solder type).....	...do.....	697.0	26.1		
36430 91	Lightning rods.....		(X)	2.0	(X)	4.1
36430 92	Overhead trolley line material (except pole-line hardware and expansion shells and plugs for roof bolting in mines).....		(X)	7.0	(X)	4.6
36430 98	Other current-carrying wiring devices, including rosettes, etc.....		(X)	39.9	(X)	60.4

(NA) Not available. n.e.c. Not elsewhere classified. (X) Not applicable.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

(See appendix, "Explanation of Terms")						
Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3643.--CURRENT CARRYING WIRING DEVICES					
	MATERIALS, COMPONENTS, PARTS, CONTAINERS AND SUPPLIES, TOTAL. ....		(X)	296.3	(X)	225.5
	Mill shapes and forms (except casting):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	5.2	2.7	1.6	0.8
331012	Sheet and strip.....	..do.....	52.2	9.2	17.0	3.7
331017	Wire and wire products.....	..do.....	5.1	2.2	5.7	2.4
331019	All other carbon steel mill shapes and forms.....	..do.....	0.5	0.2	1.5	0.4
331020	Alloy steel (except stainless).....	..do.....	6.6	2.6	6.6	2.7
331031	Stainless steel.....	..do.....	1.7	2.2	0.8	1.0
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction).....	Million pounds...	15.9	7.2	5.5	2.6
335790	Insulated wire and cable.....	Million pounds (copper content)	(NA)	8.0	12.0	5.8
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million pounds...	11.5	6.0	13.3	6.9
335123	Plate, sheet, and strip including military cups and discs..	..do.....	23.9	18.4	25.8	18.2
335127	Pipe and tube.....	..do.....	(NA)	2.0	4.2	2.6
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate and foil.....	..do.....	2.5	1.2	4.4	1.9
335205	Extruded shapes (including extruded rod, bar, pipe tube, etc.).....	..do.....	(NA)	2.6	3.2	1.3
335209	All other aluminum mill shapes and form (wire, rolled rod and bar welded tubing, etc.).....	..do.....	2.7	1.0	3.9	2.4
	Refinery shapes:					
333122	Copper and copper-base alloy.....	1,000 short tons.	4.3	3.0	2.3	1.6
333401	Aluminum and aluminum-base alloy.....	..do.....	(D)	(D)	0.5	0.3
333348	Zinc and zinc-base alloy.....	..do.....	1.0	0.4	0.4	0.2
	Scrap (exclude home scrap):					
999812	Copper and copper-base alloy.....	..do.....	(D)	(D)	(D)	(D)
999808	Aluminum and aluminum-base alloy.....	..do.....	(D)	(D)	(D)	(D)
	Casting (rough and semifinished):					
332011	Iron (gray and malleable).....	..do.....	2.1	1.3	0.5	0.3
336100	Aluminum and aluminum-base alloy.....	Million pounds...	3.9	3.3	2.8	2.3
336200	Copper and copper-base alloy.....	..do.....	2.9	2.6	2.4	2.0
367408	Solid state semi-conductors.....	Million units...	4.8	2.6	1.7	0.4
282130	Thermoplastic resins, including modified resins (includes resin content of vinyls and dry bases for cellulose, polyethylenes, polypropylenes, styrenes, etc. Includes granules, pellets, powder, liquid, etc., and excludes sheets, rods, tubes and other shapes).....	Million pounds (dry basis)....	9.8	3.0	21.0	6.3
282140	Thermosetting resins (melamines, phenolics, polyesters, ureas, etc.). Includes granules, pellets, powder, liquid, etc. and excludes sheets, rods, tubes, and other shapes.....	..do.....	14.1	8.7	8.8	5.3
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	153.2	(X)	105.8
973000	Materials, parts, containers and supplies, n.s.k.....		(X)	52.7	(X)	48.3

(D) Included with material code 970099 "All other materials, etc." to avoid disclosing operations of individual companies.  
(X) Not applicable.

(NA) Not available.

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3643, these small establishments accounted for less than 1.0 percent of payrolls and 1.0 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

**U.S. DEPARTMENT OF COMMERCE**  
**Bureau of the Census**  
Washington, D.C. 20233

POSTAGE AND FEES PAID  
U.S. DEPARTMENT OF COMMERCE

OFFICIAL BUSINESS





# 1967 CENSUS OF MANUFACTURES



MC67(P)-36C-4

## INDUSTRY SERIES

**preliminary  
report**

### Noncurrent carrying wiring devices

SIC Code 3644

The Noncurrent Carrying Wiring Devices Industry includes establishments primarily engaged in manufacturing noncurrent carrying wiring devices. Important products of this industry include conduits and fittings; electrical insulators and insulation materials, except porcelain insulators (industry 3264) and glass insulators (industry 3229); outlet, switch and fuse boxes; and pole line hardware.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Noncurrent Carrying Wiring Devices

Industry amounted to \$636.5 million, an increase of 33 percent compared with 1963. Value added by manufacture at \$346.4 million in 1967 was 36 percent more than value added in 1963. Average employment in the industry showed an increase of 14 percent from 1963 to a total of 23.2 thousand employees in 1967.

Of the \$636.5 million total value of shipments and other receipts of establishments classified as noncurrent carrying wiring devices, \$94.2 million were products primary to other industries; and \$34.4 million were receipts for miscellaneous activities. The industry shipments of primary products represented 84 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 77 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)
INDUSTRY 3644.--NONCURRENT CARRYING WIRING DEVICES														
1967 Census....	174	105	23.2	158.7	17.0	34.2	102.1	346.4	294.8	636.5	20.8	136.9	84	80
1966 ASM <sup>1</sup> .....	(NA)	(NA)	24.3	170.6	18.1	37.2	114.0	360.3	311.5	673.9	*20.9	139.3	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	21.5	143.2	16.0	33.2	95.8	326.2	285.8	591.8	15.7	136.1	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	20.6	132.1	15.4	31.4	87.5	291.0	240.6	520.2	10.3	110.5	(NA)	(NA)
1963 Census....	182	103	20.3	123.6	14.8	29.7	79.6	253.9	226.5	479.0	7.9	101.5	77	80
1962 ASM <sup>1</sup> .....	(NA)	(NA)	23.0	135.0	15.9	32.9	86.1	255.9	229.2	487.3	11.1	99.6	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	23.2	134.1	15.9	33.1	85.9	257.5	224.6	472.8	12.9	102.4	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	22.4	122.0	15.3	31.3	79.1	246.8	193.5	430.8	10.7	89.6	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	23.2	126.3	16.1	34.4	84.0	264.7	213.3	469.8	10.1	83.6	(NA)	(NA)
1958 Census <sup>2</sup> ...	150	93	19.7	101.4	14.6	28.7	67.8	214.6	193.0	413.8	10.0	80.9	78	89

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 3 and 2, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued November 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

Harold C. Passer, Assistant Secretary for Economic Affairs

BUREAU OF THE CENSUS George Hay Brown, Director



The total value of noncurrent carrying wiring devices shipped by all producers in 1967 was \$631.7 million of which \$507.9 million, or 80 percent, were shipped by plants classified in industry 3644, Noncurrent Carrying Wiring Devices, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 80 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3644, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-36K, Wiring Devices and Supplies.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3644.--NONCURRENT CARRYING WIRING DEVICES													
United States, total.....	174	105	23.2	158.7	17.0	34.2	102.1	346.4	294.8	636.5	20.8	20.3	253.9
Northeast.....	67	39	9.9	68.6	7.1	14.4	42.7	154.0	103.8	254.8	8.5	(D)	(D)
East North Central....	43	29	7.1	49.2	5.2	10.3	30.9	98.3	91.7	188.2	(D)	(D)	(D)
Illinois.....	17	11	3.7	25.6	2.7	5.5	15.7	57.6	50.6	106.0	(D)	(D)	(D)
West North Central....	10	8	2.1	15.3	1.5	2.9	9.4	30.9	26.8	58.5	(D)	(D)	(D)
South.....	27	16	2.9	17.1	2.3	4.6	12.9	42.3	55.4	96.8	4.0	(D)	(D)
South Atlantic.....	10	6	1.3	8.0	1.0	1.9	5.7	19.5	33.3	53.5	0.6	(D)	(D)
Alabama.....	5	3	0.2	0.9	0.1	0.3	0.7	1.7	2.1	3.8	(D)	0.5	5.9
West.....	27	13	1.2	8.6	1.0	1.9	6.2	20.9	17.1	38.2	1.1	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3644- --	NONCURRENT CARRYING WIRING DEVICES, TOTAL.....		(X)	631.7	(X)	412.9
36441 --	Pole-line and transmission hardware:					
36441 00	As reported in the census of manufactures.....		(X)	138.0	(X)	97.9
	As reported on Census Annual Form MA-36K.....		(X)	136.8	(X)	87.5
36441 12	Pole and transmission line construction materials, also known as overhead and underground line hardware for electric transmission, distribution, and communication lines, excluding pole and transmission line anchors and pole and transmission line commercially materials, where such materials are not otherwise commercially available.....		(X)	99.4	(X)	74.6
36441 13	Pole and transmission line anchors.....		(X)	4.5		
36441 14	Pole and transmission line construction materials, manufactured to specification, where such materials are not otherwise commercially available.....		(X)	10.9		
36441 51	Transmission hardware for high voltage porcelain products (including clamps, end fittings, strain yokes).....		(X)	22.0	(X)	12.9
36441 00	Pole-line and transmission hardware, n.s.k.....		(X)	2.1	(X)	(X)
36442 --	Electrical conduit and conduit fittings:					
36442 00	As reported in the census of manufactures.....		(X)	348.4	(X)	242.1
	As reported on Census Annual Form MA-36K.....		(X)	346.0	(X)	240.0
	Rigid conduit (standard weight), metal only, including couplings, nipples, bends, and elbows:					
36442 21	Steel.....	1,000 short ton	337.8	85.6	251.3	66.3
36442 25	Aluminum.....	do.	24.5	19.4	(X)	19.9
36442 26	Other metal conduit.....	do.				
36442 27	Electrical metallic tubing.....	do.	307.8	53.4	157.5	40.9
36442 33	Flexible steel conduit.....	Million ft.	126.9	11.7	90.3	7.0
	Raceways and wireways, including fittings' metal:					
36442 34	Surface.....		(X)	9.3	(X)	21.9
36442 37	Underfloor.....		(X)	18.2		
36442 38	Ventilated cable tray and accessories.....		(X)	10.9		
36442 41	Rigid conduit fittings, excluding couplings, nipples, bends and elbows.....		(X)	45.9	(X)	75.2
	EMT fittings:					
36442 42	Ferrous.....		(X)	15.3		
36442 43	Nonferrous.....		(X)	12.4		
36442 44	Service entrance caps, ells and connectors.....		(X)	5.7	(X)	23.5
36442 45	Armored cable, flexible conduit and nonmetallic cable fittings.....		(X)	23.5		
36442 76	Other.....		(X)	24.9		
	Switch and outlet wall plates:					
36642 03	Metal.....	Million units..	33.8	3.9	23.1	2.4
36442 65	Plastic.....	do.	70.5	5.9	96.8	5.9
36642 00	Electrical conduit and conduit fittings, n.s.k.....		(X)	(X)	(X)	(X)
36443 --	Other noncurrent carrying wiring devices and supplies:					
36443 00	As reported in the census of manufactures.....		(X)	141.0	(X)	92.8
	As reported on Census Annual Form MA-36K.....		(X)	137.9	(X)	85.4
	Stamped metal boxes, covers, and accessories (including clamped conduit boxes):					
36443 31	Switch and receptacle boxes.....	Million units..	175.9	31.5	99.1	16.1
36443 32	Outlet boxes.....	do.	292.5	50.6	121.5	19.0
36443 33	Covers.....	do.	(NA)	10.8	(X)	6.1
36443 34	Supports, bar hangers and other accessories.....		(X)	11.0		
	Cast metal boxes, covers and accessories:					
	Switch receptacle, outlet and conduit boxes (including covers):					
36443 35	Ferrous.....		(X)	21.3	(X)	44.2
36443 36	Nonferrous.....		(X)	6.3		
36443 37	Plastic boxes and covers.....		(X)	6.4	(X)	(X)
36443 38	Floor boxes and covers.....		(X)			
36443 00	Other noncurrent carrying wiring devices and supplies, n.s.k.....		(X)	(X)	(X)	(X)

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963--Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3644- --	NONCURRENT CARRYING WIRING DEVICES--Continued					
36440 00	Noncurrent carrying wiring devices, n.s.k. (Represents establishments with 10 employees or more in 1967).....	.....	(X)	2.4	} (X)	(X)
36440 02	Noncurrent carrying wiring devices, n.s.k. (Represents establishments with fewer than 10 employees in 1967).....	.....	(X)	1.9		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3644.--NONCURRENT CARRYING DEVICES					
	MATERIALS, COMPONENTS, CONTAINERS AND SUPPLIES, TOTAL.....		(X)	262.9	(X)	203.4
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bar and bar shapes.....	1,000 short tons..	84.0	12.8	81.1	12.4
331012	Sheet and strip.....	do.....	224.5	37.0	238.8	34.1
331017	Wire and wire products.....	do.....	15.1	3.6	7.2	1.7
331019	All other carbon steel mill shapes and forms.....	do.....	125.3	20.3	187.2	31.6
331020	Alloy steel (except stainless).....	do.....	21.5	5.1	4.0	1.2
331031	Stainless steel.....	do.....				
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction).....	Million lbs.....	0.9	0.3	(D)	(D)
335790	Insulated wire and cable.....	Million lbs.....	2.6	0.9	0.3	0.1
		copper content).				
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	4.6	4.5	{	{
335123	Plate, sheet, and strip, including military cups and discs...	do.....				
335127	Pipe and tube.....	do.....				
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate and foil.....	do.....	10.5	3.8	{	{
335205	Extruded shapes (including extruded rod, bar, pipe, tube, etc.).....	do.....				
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	do.....				
		do.....				
	Refinery shapes:					
333122	Copper and copper-base alloy.....	1,000 short tons..	3.3	2.9	3.1	2.0
333401	Aluminum and aluminum-base alloy.....	do.....	3.9	1.9	2.2	1.1
333348	Zinc and zinc-base alloy.....	do.....	19.5	5.6	13.3	3.6
	Scrap (exclude home scrap):					
999812	Copper and copper-base alloy.....	do.....	(D)	(D)	(NA)	(NA)
999808	Aluminum and aluminum-base alloy scrap (purchased only).....	do.....	(D)	(D)	(D)	(D)
	Castings (rough and semifinished):					
332011	Iron (gray and malleable).....	do.....	7.6	5.5	21.7	10.1
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	9.1	4.9	5.5	3.8
336200	Copper and copper-base alloy.....	do.....	0.1	0.1	1.2	1.1
367408	Solid state semi-conductors.....	Million units.....	-	-	(NA)	(NA)
282130	Thermoplastic resins, including modified resins (includes resin content of vinyls and dry bases for cellulose, polyethylenes, polypropylenes, styrenes, etc. Includes granules, pellets, powder, liquid, etc., and excludes sheets, rods tubes and other shapes).....	Million lbs, (dry basis).....	(NA)	1.5	2.4	0.7
		do.....				
282140	Thermosetting resins (melamines, phenolica, polyesters, ureas, etc.). Includes granules, pellets, powder, liquid, etc. and excludes sheets, rods, tubes, and other shapes.....	do.....			0.9	1.6
970009	All other materials and components, parts, containers, and supplies consumed.....		(X)	<sup>1</sup> 113.7	(X)	77.7
976000	Materials, parts, containers and supplies, n.s.k. <sup>2</sup> .....		(X)	38.5	(X)	11.7

(D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or from related figures. -Represents zero. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Includes cost for materials for which symbol "D" appear.

<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3644, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--** All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--** This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--** This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--** The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--** In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--** The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

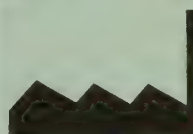
**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# 1967 CENSUS OF MANUFACTURES



MC67(P)-36D-1

## INDUSTRY SERIES

**preliminary  
report**

### Radio and TV receiving sets

SIC Code 3651

The Radio and Television Receiving Sets, Except Communication Types, Industry includes establishments primarily engaged in manufacturing electronic equipment for home entertainment. This industry also includes establishments primarily engaged in manufacturing public address systems, and music distribution apparatus except records. Establishments primarily engaged in manufacturing records are classified in industry 3652; radio and television receiving type tubes in industry 3671; and television receiving-type cathode ray tubes in industry 3672.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Radio and TV Sets Industry amounted to \$3,834.1 million, an increase of 70 percent compared with 1963. Value added by manufacture at \$1,396.6 million in 1967 was 53 percent more than value added in 1963. Average employment in the industry showed an increase of 43 percent from 1963 to a total of 116.2 thousand employees in 1967.

Of the \$3,834.1 million total value of shipments and other receipts of establishments classified as radio and TV sets, \$366.5 million were products primary to other industries; and \$96.7 million were receipts for miscellaneous activities. The industry shipments of primary

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3651.--RADIO AND TV RECEIVING SETS														
1967 Census....	341	189	116.2	640.0	95.8	182.5	460.5	1,396.6	2,482.1	3,834.1	86.1	723.8	90	97
1966 ASM <sup>1</sup> .....	(NA)	(NA)	130.2	679.4	109.8	214.0	509.8	1,685.1	2,602.1	4,117.4	121.1	756.3	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	100.1	535.1	83.1	166.2	393.2	1,249.4	1,983.1	3,207.5	58.8	459.5	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	86.5	440.6	70.9	139.8	312.7	983.4	1,529.3	2,509.7	33.3	397.8	(NA)	(NA)
1963 Census....	348	178	81.3	411.9	66.5	128.5	289.3	912.0	1,389.4	2,254.9	30.5	381.4	91	96
1962 ASM <sup>1</sup> .....	(NA)	(NA)	83.0	408.3	66.1	127.2	273.3	869.0	1,306.6	2,128.9	27.1	328.8	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	76.8	370.0	59.6	112.1	239.3	728.8	1,105.9	1,849.2	*28.7	283.2	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	71.7	340.6	56.3	108.5	222.3	694.3	1,036.0	1,719.3	19.6	277.3	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	74.9	339.4	60.2	116.2	231.7	727.1	1,079.1	1,781.1	16.6	264.1	(NA)	(NA)
1958 Census <sup>2</sup> ...	234	144	66.5	292.7	52.0	100.5	196.6	594.0	936.3	1,548.0	13.3	225.9	91	90

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** **Maurice H. Stans, Secretary**  
**Rocco C. Siciliano, Under Secretary**  
**Harold C. Passer, Assistant Secretary for Economic Affairs**  
**BUREAU OF THE CENSUS** **George Hay Brown, Director**

products represented 90 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 91 percent in 1963.

The total value of radio and TV receiving sets shipped by all producers in 1967 was \$3,460.4 million of which \$3,370.9 million, or 97 percent, were shipped by plants classified in industry 3651, Radio and TV Receiving Sets, while the remainder was shipped by plants classi-

fied in other industries. This percent, called the coverage ratio, was 96 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3651, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-36M, Home-type Radio Receivers and Television Sets;  
Automobile Radios, Phonographs and Record Players, and  
MA-36N, Selected Electronic and Associated Products

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
	INDUSTRY 3651.--RADIO AND TV RECEIVING SETS												
United States, total.....	341	189	116.2	640.0	95.8	182.5	460.5	1,396.6	2,482.1	3,834.1	86.1	81.3	912.0
New England.....	25	11	2.8	13.5	2.4	4.3	9.6	34.6	43.9	77.9	0.4	2.2	18.5
Middle Atlantic.....	92	49	24.9	152.6	19.2	37.3	100.4	258.7	472.1	731.0	24.1	21.2	237.9
New York.....	66	34	14.6	92.2	11.0	21.5	58.5	140.4	258.4	396.1	(D)	13.2	158.5
North Central.....	125	82	65.5	362.1	56.3	106.2	281.0	760.5	1,415.4	2,153.9	44.4	(D)	(D)
Illinois.....	59	43	37.9	203.8	32.9	62.4	161.7	377.1	838.1	1,225.7	(D)	29.0	301.2
South.....	40	24	18.2	82.7	14.6	27.9	54.4	286.0	502.3	769.0	15.5	(D)	(D)
South Atlantic.....	12	7	4.4	22.5	3.8	7.6	16.4	54.0	84.9	133.6	8.2	(D)	(D)
West.....	59	23	4.8	29.1	3.4	6.8	15.1	56.8	48.3	102.3	1.7	4.3	42.1
California.....	50	22	4.7	28.8	3.4	6.7	14.9	56.2	47.8	101.2	(D)	4.2	41.9

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (million units)	Value (million dollars)	Quantity (million units)	Value (million dollars)
3651- --	RADIO AND TV RECEIVING SETS, TOTAL.....	(X)	3,460.4	(X)	2,070.8
36511 --	Household and automobile radios, and radio-phonograph combinations:				
	As reported in the census of manufactures.....	(X)	692.9	(X)	531.3
	As reported on Census annual Form MA-36M.....	19.3	686.5	18.1	520.0
	Home-type receivers, complete sets (except radio-phonograph combinations and television sets), total.....	9.4	151.2	9.3	150.7
	Socket powered (except consoles), total.....	6.4	108.6	5.3	87.2
	Table models (except clock), total.....	2.4	42.9	3.0	46.7
36511 01	AM.....	1.3	13.1	2.7	39.7
36511 02	AM-FM.....	1.1	29.8	0.3	7.0
	Clock models, total.....	4.0	65.8	3.0	46.7
36511 03	AM.....	3.1	42.5	2.8	39.7
36511 04	AM-FM.....	0.9	23.3	0.3	7.0
	Transistor portable:				
36511 21	AM.....	12.0	118.6	3.9	59.9
36511 22	AM-FM.....	1.0	24.0		
36511 23	Other home-type radios (battery-powered table and console models; socket-powered consoles; and portables, except transistor type).....	(1)	(1)	0.1	3.6
	Home-type radio-phonograph combinations, complete sets (including built-in recorders, excluding TV sets), total.....	1.7	324.2	1.2	192.7
	Table models (including portable sets), total.....	0.2	31.7	0.2	12.6
36511 13	AM.....	0.1	2.6	0.1	7.2
36511 14	AM-FM.....	0.2	29.0	0.1	5.4
	Console models, total.....	1.5	292.5	1.0	180.1
36511 15	AM.....			(2)	1.8
36511 16	AM-FM.....			1.0	178.3
36511 17	Automobile radios (broadcast receivers only).....	8.2	211.1	7.6	176.6
36512 --	Household television receivers (color and black and white), including television combinations:				
	As reported in the census of manufactures.....	(X)	2,224.0	(X)	1,092.3
	As reported on Census annual Form MA-36M.....	9.7	2,191.5	7.7	1,067.1
	Table models, including portable sets (with or without conventional radio):				
36512 01	Black and white.....	4.0	340.6	4.7	459.8
36512 02	Color.....	1.3	351.8	0.1	20.4
	Console and consolette models (with or without conventional radio):				
36512 03	Black and white.....	0.8	92.4	2.0	273.8
36512 04	Color.....	3.3	1,223.5	0.6	206.7
	Radio-phonograph-TV recorder combination models:				
36512 05	Black and white.....	0.1	10.7	0.3	75.8
36512 06	Color.....	0.3	172.5	0.1	30.6
36514 --	Phonographs and record player attachments; radio and television chassis sold separately; recorders, tuners; and other similar home-type electronic equipment:				
36514 10	Phonographs and record players with attachments:				
	As reported in the census of manufactures.....	(X)	205.8	(X)	178.9
	As reported on Census annual Form MA-36M.....	6.2	202.5	3.7	174.1
	Phonographs, total.....	3.8	186.5	3.7	170.9
36514 01	Mechanical (acoustical) reproduction phonographs (with spring or electric motor).....	0.2	1.3	0.4	2.4
	Electronic phonographs (with speaker), total.....	3.6	185.2	3.3	168.5
36514 02	Coin operated.....	0.1	48.0	0.1	43.3
	Noncoin operated, total.....	3.6	137.2	3.3	125.1
36514 03	Monaural.....	1.8	35.9	1.6	33.6
36514 04	Stereophonic.....	1.8	101.2	1.7	91.5
	Record players, total.....	0.6	16.0	0.1	3.2
36514 05	With automatic record changers.....	0.4	11.5	0.1	1.6
36514 06	With nonautomatic record changers.....	0.2	4.5	0.1	1.7

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (million units)	Value (million dollars)	Quantity (million units)	Value (million dollars)
3651- --	RADIO AND TV RECEIVING SETS--Continued.				
36514 --	Phonographs and record player attachments; radio and television chassis sold separately; recorders, tuners; and other similar home-type electronic equipment--Continued.				
	Recorders, tuners, and other similar home-type electronic equipment for sale separately:				
36514 20	As reported in the census of manufactures.....	(X)	133.1	(X)	125.5
	As reported on Census annual Form MA-36M.....	2.5	128.2	2.3	103.9
36514 31	Recorders, home-type, tape, wire, and disc (except radio-phonograph-TV-receiver combinations; office recording machines, and recorder mechanisms).....	0.8	49.6	0.4	43.5
36514 62	Audio amplifiers and preamplifiers, home-type.....	0.2	21.6	0.2	17.3
36514 65	Tuners, AM, FM, and AM-FM and tuner-amplifier combinations.....	0.4	43.1	1.1	35.4
36514 67	Other home-type electronic equipment (converter, adapters, etc.)....	1.1	13.9	0.6	7.7
	Chassis for home-type radio and television receivers for sale separately:				
36514 30, 40	As reported in the census of manufactures.....	(X)	10.1	(X)	12.1
	As reported on Census annual Form MA-36M.....	0.5	8.2	0.6	8.8
36514 70	Chassis for home-type radio receivers, for sale separately.....			(Z)	0.4
36514 86	Chassis for home-type television receivers, for sale separately....	0.5	8.2	0.6	8.4
36514 00	Recorders, audio amplifiers, audio equipment, etc., n.s.k.....	(X)	-	(X)	3.5
36515 --	Speaker systems, microphones, home-type electronic kits and commercial sound equipment, including public address systems, total.....	(X)	169.0	(X)	114.2
36515 51	Loud speakers, speaker systems (sold separately):				
	As reported in the census of manufactures.....	(X)	101.9	(X)	71.3
	As reported on Census annual Form MA-36N.....	(X)	94.5	(X)	69.5
36515 55	Microphones (all types):				
	As reported in the census of manufactures.....	(X)	34.8	(X)	18.9
	As reported on Census annual Form MA-36N.....	(X)	33.9	(X)	17.6
36515 67	Home-type electronic kits to be assembled by consumer for radio receivers, tuners, amplifiers, and other audio equipment:				
	As reported in the census of manufactures.....	(X)	20.8	(X)	14.5
	As reported on Census annual Form MA-36N.....	(X)	19.9	(X)	12.8
36515 90	Other commercial sound equipment, except broadcast, including complete public address systems, music distribution apparatus, etc. (excluding components):				
	As reported in the census of manufactures.....	(X)	11.5	(X)	9.5
	As reported on Census annual Form MA-36N.....	(X)	10.6	(X)	7.1
36510 00	Radio and television receiving sets, n.s.k. (Represents principally establishments with 10 or more employees in 1967. See Note.).....	(X)	20.1		
36510 02	Radio and television receiving sets, n.s.k. (Represents principally establishments with 10 or less employees in 1967. See Note.).....	(X)	5.4	(X)	16.1

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

- Represents zero. n.s.k. Not specified by kind. (X) Not applicable. (Z) Less than 0.1 when rounded.

<sup>1</sup>Figures for "Other home-type radios" are included with those for "Home-type transistor AM radios."

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3651.--RADIO AND TV RECEIVING SETS					
	Materials, parts, containers, and supplies, total.....		(X)	2,250.6	(X)	1,335.0
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	7.4	2.3	2.5	0.5
331012	Sheet and strip.....	..do.....	38.1	7.2	49.7	10.2
331019	All other carbon steel mill shapes and forms.....	..do.....	(NA)	3.0	7.8	1.5
331020	Alloy steel (except stainless).....	..do.....	12.2	4.8	2.2	0.7
331031	Stainless steel.....	..do.....	0.4	1.0	0.2	0.4
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction only).....	Million lbs.....	38.7	9.8	5.2	1.5
335790	Insulated wire and cable.....	Million lbs. (copper content)	18.4	11.0	18.6	11.5
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	0.9	0.7	0.6	0.5
335123	Plate, sheet, and strip, including military cups and discs...	..do.....				
335127	Pipe and tube.....	..do.....				
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	..do.....	2.6	1.4	0.9	0.6
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	..do.....	3.7	2.2	1.6	1.0
335209	All other aluminum mill shapes and forms (wire rolled rod and bar, powder, welded tubing, etc.).....	..do.....				
336100	Aluminum and aluminum-base alloy castings (rough and semi- finished) <sup>1</sup> .....	..do.....	3.8	3.0	0.8	0.7
	Fractional horsepower electric motors (under 1 hp.): <sup>1</sup>					
362110	Timing motors, synchronous and subsynchronous.....	Millions.....	4.9	9.6	1.2	2.9
362115	Other fractional horsepower electric motors (excluding timing motors).....	..do.....	4.3	11.5	1.6	6.4
367012	Electron tubes, except X-ray and cathode ray picture tubes <sup>1</sup> .....	..do.....	148.2	86.4	200.1	274.3
367200	Cathode ray picture tubes <sup>1</sup> .....	..do.....	7.3	616.0		
367408	Solid state semiconductors <sup>1</sup> .....	..do.....	169.3	48.0	86.0	24.4
367410	Monolithic (solid state) integrated circuits.....	..do.....	(X)	(D)	(X)	(NA)
281995	Silicon, hyper pure.....	Kilograms.....	(D)	(D)	(NA)	(NA)
333977	Cermanium.....	Pounds.....	(D)	(D)	(NA)	(NA)
251011	Cabinets (wood, metal, and plastics).....	Millions.....	16.5	243.6	(NA)	<sup>2</sup> 189.0
339913	Ferrite (powders and paste).....	..do.....	(X)	2.5	(X)	1.1
260091	Paper and paperboard containers.....	..do.....	(X)	24.2	(X)	<sup>2</sup> 16.0
970099	All other materials, and components, parts, containers, and supplies consumed.....	..do.....	(X)	943.3	(X)	654.6
976000	Materials, parts, containers, and supplies, n.s.k. <sup>3</sup> .....	..do.....	(X)	219.1	(X)	137.2

(D) Included with material code 970099 "All other materials, etc." to avoid disclosing the operations of individual companies. (NA) Not available.  
n.s.k. Not specified by kind. (X) Not applicable.<sup>1</sup>No data are available on the quantities of aluminum and aluminum-base alloy castings, fractional horsepower electric motors, electron tubes, cathode ray picture tubes and solid state semiconductors produced and consumed in the same establishment.<sup>2</sup>Represents estimates published in MC63(4)-8 (Supplement), Selected Materials Consumed, from data collected in a supplemental survey on Form MA-131, consumption of materials, parts, containers and supplies, during 1963. This survey was limited to large establishments in selected chemical, machinery and equipment industries and resulted in estimates which are subject to greater error than are the figures on materials consumption collected as a regular part of the census of manufactures.<sup>3</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3651, these small establishments accounted for approximately 0.1 percent of payrolls and 0.1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.

# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-36D-2

## INDUSTRY SERIES

### Phonograph records

SIC Code 3652

### preliminary report

The Phonograph Records Industry includes establishments primarily engaged in manufacturing phonograph records and prerecorded magnetic tape. Establishments primarily engaged in manufacturing electronic equipment for home entertainment, except records and prerecorded magnetic tape, are classified in industry 3651.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Phonograph Records Industry amounted to \$273.2 million, an increase of 52 percent compared with 1963. Value added by manufacture

at \$180.1 million in 1967 was 44 percent more than value added in 1963. Average employment in the industry showed an increase of 40 percent from 1963 to a total of 13.4 thousand employees in 1967.

Of the \$273.2 million total value of shipments and other receipts of establishments classified as phonograph records, less than \$1 million were products primary to other industries; and \$4.3 million were receipts for miscellaneous activities. The industry shipments of primary products represented 99 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 99 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3652.--PHONOGRAPH RECORDS														
1967 Census....	319	71	13.4	75.8	10.9	22.0	53.5	180.1	94.1	273.2	7.1	38.0	99	99
1966 ASM <sup>1</sup> .....	(NA)	(NA)	11.0	57.8	9.1	18.0	43.0	156.2	68.4	218.4	7.6	32.0	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	10.1	52.2	8.3	16.8	37.5	140.7	64.1	201.4	7.3	24.6	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	9.9	47.9	8.0	15.9	35.0	152.4	56.8	207.2	8.1	20.2	(NA)	(NA)
1963 Census....	167	60	9.6	47.0	7.6	15.0	33.0	125.4	54.1	180.2	8.7	19.9	99	97
1962 ASM <sup>1</sup> .....	(NA)	(NA)	9.2	45.3	7.1	14.4	31.5	126.3	62.5	189.3	3.1	18.7	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	8.4	39.6	6.6	13.1	27.8	109.5	54.5	165.5	3.5	17.2	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	8.2	37.4	6.5	13.3	26.3	99.6	54.8	154.9	5.6	21.3	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	7.6	35.2	6.0	12.5	25.2	91.9	58.4	150.6	4.3	21.3	(NA)	(NA)
1958 Census <sup>2</sup> ...	94	53	7.4	33.4	5.9	12.2	23.7	93.1	58.7	148.7	4.0	20.3	97	98

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director

The total value of phonograph records shipped by all producers in 1967 was \$268.2 million of which \$266.8 million, or 99 percent, were shipped by plants classified in industry 3652, Phonograph Records, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 97 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
	INDUSTRY 3652.--PHONOGRAPH RECORDS												
United States, total.....	319	71	13.4	75.8	10.9	22.0	53.5	180.1	94.1	273.2	7.1	9.6	125.4
New England.....	10	4	0.1	0.7	0.1	0.2	0.5	2.3	1.5	3.7	0.1	0.7	4.7
Middle Atlantic.....	135	33	6.0	32.6	5.0	9.9	24.5	78.6	49.0	125.1	2.5	4.2	45.8
New York.....	88	11	1.3	7.2	1.2	2.3	5.7	19.1	11.5	30.4	(D)	0.8	5.0
New Jersey.....	29	17	3.6	19.5	3.0	5.8	14.0	52.0	29.1	79.3	(D)	(D)	(D)
Pennsylvania.....	18	5	1.0	5.8	0.9	1.8	4.8	7.4	7.9	15.3	0.2	(D)	(D)
North Central.....	40	13	4.8	27.1	3.7	7.5	17.2	62.5	24.4	88.3	2.7	(D)	(D)
South Atlantic.....	16	1	0.1	0.5	0.1	0.2	0.4	1.3	0.6	1.9	(Z)	(D)	(D)
East South Central....	22	3	0.2	1.3	0.2	0.4	1.1	2.4	2.6	5.0	0.2	(D)	(D)
West South Central....	19	2	0.1	0.6	0.1	0.2	0.4	1.7	0.7	2.4	0.1	(D)	(D)
West.....	77	15	2.1	13.1	1.7	3.5	9.4	31.3	15.4	46.8	1.5	1.6	24.0
California.....	67	14	2.1	12.8	1.7	3.5	9.2	30.9	15.1	46.1	(D)	1.6	23.8

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.

**TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963**

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	1967			1963		
			Production for all purposes (quantity)	Total shipments, including interplant transfers		Production for all purposes (quantity)	Total shipments, including interplant transfers	
				Quantity	Value (million dollars)		Quantity	Value (million dollars)
3652- --	PHONOGRAPH RECORDS, TOTAL.....	.....	(X)	(X)	268.2	(X)	(X)	178.7
36520 --	Phonograph records, record blanks, and prerecorded tapes							
	Disc record (except electrical transcriptions):							
	45 r.p.m.:							
	For own label.....	million						
36520 24	On contract basis for others.....	units.....	163.3	156.2	21.6	98.8	70.7	15.4
		..do.....	(X)	202.7	19.8	(X)	111.6	12.6
	33-1/3 r.p.m.--for own label:							
36520 31	Stereophonic.....	..do.....	138.2	132.7	76.6	58.6	31.0	35.4
36520 33	Monaural.....	..do.....	96.3	94.9	38.7	68.9	52.1	40.2
	33-1/3 r.p.m.--on contract basis for others:							
36520 35	Stereophonic.....	..do.....	(X)	84.8	33.1	(X)	40.0	21.1
36520 37	Monaural.....	..do.....	(X)	55.6	16.4	(X)	36.1	22.9
36520 61	Other speeds, including 78 r.p.m. and electrical transcriptions of all speeds.....	..do.....	0.7	0.8	0.6	15.8	23.7	11.9
	Recorded tapes:							
36520 83	For own label.....	1,000 reels	(NA)	12.1	33.9	} 1.4	1.4	3.8
36520 85	On contract basis for others.....	..do.....	(X)	1.4	2.0			
36520 91	Record blanks (disc-type and other).....	.....	(X)	(X)	4.7	(X)	(X)	5.5
36520 00	Phonograph records, n.s.k. (represents establishments with 10 employees or more in 1967. See Note.).....	.....	(X)	(X)	12.6	} (X)	(X)	9.8
36520 02	Phonograph records, n.s.k. (represents establishments with fewer than 10 employees in 1967. See Note.).....	.....	(X)	(X)	8.3			

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. (X) Not applicable.

**TABLE 4. Materials Consumed, by Kind: 1967 and 1963**

(Not applicable to this report)



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3652, these small establishments accounted for approximately 4 percent of payrolls and 3 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.

# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

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The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

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**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

**Textile mill products • Apparel and leather • Chemicals, rubber, and plastics • Machinery and equipment • Primary metals • Intermediate metal products • Processed foods • Lumber, furniture, and paper products • Stone, clay, and glass products.**

A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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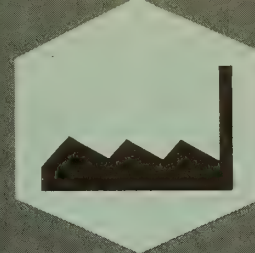
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# 1967 CENSUS OF MANUFACTURES



MC67(P)-36D-3

## INDUSTRY SERIES

### Telephone and telegraph apparatus

SIC Code 3661

**preliminary  
report**

The Telephone and Telegraph Apparatus Industry includes establishments primarily engaged in manufacturing wire telephone and telegraph equipment, and parts especially designed for telephone and telegraph use.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

Data on cost of materials and value of shipments of the Telephone and Telegraph Apparatus Industry include extensive duplication resulting from the transfer of products such as telephone and telegraph components to establishments producing complete telephone and telegraph equipment. The value of such shipments are duplicated in the total

value of shipments. A corresponding duplication enters into the total cost of materials. The data shown for value added by manufacture (value of shipments less cost of materials, etc.) avoid this duplication.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Telephone and Telegraph Apparatus Industry amounted to \$2,624.0 million, an increase of 51 percent compared with 1963. Value added by manufacture at \$1,551.4 million in 1967 was 53 percent more than value added in 1963. Average employment in the industry showed an increase of 30 percent from 1963 to a total of 116.6 thousand employees in 1967.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials <sup>a</sup>	Value of shipments <sup>a</sup>	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
INDUSTRY 3661.--TELEPHONE AND TELEGRAPH APPARATUS														
1967 Census....	107	64	116.6	837.1	84.0	160.3	539.5	1,551.4	1,100.1	2,624.0	112.4	543.0	87	98
1966 ASM <sup>1</sup> .....	(NA)	(NA)	112.7	780.4	82.1	158.4	507.3	1,431.8	1,068.9	2,467.0	109.7	485.8	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	102.2	705.4	75.3	150.1	469.3	1,361.5	966.4	2,272.6	89.9	418.5	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	94.0	630.0	67.6	132.3	409.8	1,128.6	826.2	1,954.3	53.5	361.7	(NA)	(NA)
1963 Census....	90	56	89.5	554.4	64.0	122.7	358.7	1,013.8	704.2	1,736.4	55.1	331.4	95	95
1962 ASM <sup>1</sup> .....	(NA)	(NA)	98.7	620.7	68.2	136.0	378.0	1,024.7	794.7	1,883.6	77.4	356.5	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	92.2	562.2	62.4	124.2	339.1	1,004.1	690.6	1,680.4	65.3	393.3	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	87.5	529.7	61.1	124.0	329.5	845.9	629.4	1,484.5	78.2	347.9	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	80.4	464.1	56.1	111.8	286.9	798.0	527.1	1,295.2	*72.0	328.9	(NA)	(NA)
1958 Census <sup>2</sup> ...	91	51	80.1	430.7	54.3	105.5	268.9	715.5	469.7	1,208.0	102.8	288.9	96	99

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.  
(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

<sup>3</sup>The value of shipments and cost of materials for this industry include extensive duplication arising from shipments between establishments in the same industry classifications. See footnote 1, table 3 for an approximation of interplant transfers of products classified in this industry. For further explanation see text.

Issued January 1970

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

Harold C. Passer, Assistant Secretary for Economic Affairs

**BUREAU OF THE CENSUS** George Hay Brown, Director



Of the \$2,624.0 million total value of shipments and other receipts of establishments classified as telephone and telegraph apparatus, \$311.9 million were products primary to other industries; and \$129.9 million were receipts for miscellaneous activities. The industry shipments of primary products represented 87 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 95 percent in 1963. The exact percentage is not very meaningful due to the duplication described above.

The total value of telephone and telegraph apparatus shipped by all producers in 1967 was \$2,228.9 million of which \$2,182.2 million, or 98

percent, were shipped by plants classified in industry 3661, Telephone and Telegraph Apparatus, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 95 percent in 1963. The exact percentage is not very meaningful due to the duplication described above.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3661, the Census Bureau collects for the Business and Defense Services Administration current statistics on selected products. These data appear in the Current Industrial Reports series:

BDSA-363B-Communication Equipment.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
	INDUSTRY 3661, --TELEPHONE AND TELEGRAPH APPARATUS												
United States, total.....	107	64	116.6	837.1	84.0	160.3	539.5	1,551.4	1,100.1	2,624.0	112.4	89.5	1,013.8
Northeast.....	40	17	26.9	203.5	20.0	39.3	136.5	371.6	279.9	646.3	18.7	26.5	276.2
North Central.....	26	22	64.5	466.1	45.9	86.3	298.8	845.6	537.8	1,368.3	48.4	50.7	591.4
Indiana.....	1	1	7.5	53.8	5.9	11.0	39.5	98.6	57.3	156.8	6.7	(D)	(D)
Nebraska.....	1	1	3.9	26.9	3.1	5.9	19.7	51.2	47.2	98.4	2.0	(D)	(D)
South.....	22	16	21.0	136.7	15.6	29.4	88.1	265.2	249.2	509.5	43.9	9.4	107.1
Maryland.....	1	1	4.0	28.7	3.2	5.8	21.7	55.3	40.3	94.8	3.2	(D)	(D)
Oklahoma.....	1	1	5.1	33.1	4.1	7.6	23.7	62.9	63.9	127.9	4.0	(D)	(D)
West.....	19	9	4.2	30.8	2.4	5.3	16.1	69.0	33.2	99.8	1.4	2.9	39.1

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers					
		1967		1963			
		Quantity (1,000 sets)	Value (million dollars)	Quantity (1,000 sets)	Value (million dollars)		
3661- --	TELEPHONE AND TELEGRAPH APPARATUS, TOTAL.....	(X)	2,228.9	(X)	1,538.0		
36611 --	Telephone switching and switchboard equipment.....	(X)	841.1	(X)	491.3		
36611 11	Telephone switchboards (central office and PBX subscriber A and B, trunk and toll).....	(X)	196.7	(X)	96.7		
36611 53	Dial automatic telephone switching equipment (central office, PBX, and toll) excluding electronic switching equipment.....	4,298.4	540.0	(NA)	378.9		
36611 55	Electronic telephone switching equipment (central office, PBX, and toll).....	(X)	101.4	(X)	15.7		
36611 00	Telephone switching and switchboard equipment, n.s.k.....	(X)	3.0	(X)	-		
36612 --	Other telephone and telegraph (wire) apparatus, equipment, and components. Telephone carrier equipment and repeater equipment (including open-wire and cable transmission):	(X)	1,371.9	(X)	1,045.2		
36612 13	Carrier equipment.....	(X)	244.0	(X)	223.3		
36612 15	Repeater equipment.....						
	Telephone instrument sets (transmitters and receivers with or without dial, for subscriber use only):						
36612 33	Push-button dial type.....	1,689.4	39.2	8,534.2	120.4		
36612 35	Other than push-button dial type.....	8,058.5	131.9				
36612 61	Other telephone apparatus and equipment, including components.....	(X)	700.3	(X)	572.9		
	Telegraph (wire) apparatus and equipment and components, including military:						
36612 73	Teleprinter units.....	(NA)	91.7	(X)	116.7		
36612 75	Telegraph switching equipment.....	(X)	2.9				
36612 77	Telegraph carrier systems.....	(X)	127.8				
36612 79	All other telegraph apparatus, equipment and components, including facsimile.....						
36612 81	Data sets (digital or analog).....	(NA)	29.7	14.4	10.0		
36612 00	Other telephone and telegraph (wire) apparatus, equipment and components, n.s.k.....	(X)	4.4	(X)	1.9		
36610 00	Telephone and telegraph apparatus, n.s.k. (Represents principally establishments with 10 or more employees in 1967. See Note.).....	(X)	14.4	(X)	1.5		
36610 02	Telephone and telegraph apparatus, n.s.k. (Represents principally establishments with fewer than 10 employees. See Note.).....	(X)	1.5				

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Includes interplant transfers between establishments of the same company valued between \$250 and \$400 million. The exact figure cannot be published without revealing the operations of individual companies.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
INDUSTRY 3661.-TELEPHONE AND TELEGRAPH APPARATUS						
	Materials, parts, containers, and supplies, total.....		(X)	995.7	(X)	655.0
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	21.8	4.0	19.5	3.8
331012	Sheet and strip.....	...do.....	82.8	16.6	85.6	12.1
331019	All other carbon steel mill shapes and forms.....	...do.....	9.0	2.2	7.2	1.7
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	...do.....	}	(NA)	10.1	8.4
331029	All other alloy steel mill shapes and forms.....	...do.....				
331031	Stainless steel.....	...do.....				
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction only).....	Million lbs.....	10.0	11.8	7.2	7.5
335790	Insulated wire and cable.....	Million lbs. (copper content).....	17.3	19.1	12.7	25.3
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	12.0	7.4	8.5	5.2
335123	Plate, sheet, and strip, including military cups and discs..	...do.....	(NA)	16.4	22.6	11.9
335127	Pipe and tube.....	...do.....	2.7	2.5	1.5	1.1
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate and foil.....	...do.....	5.6	2.7	5.0	2.8
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	...do.....	2.2	1.2	1.1	0.6
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	...do.....	2.8	1.6	4.2	1.7
336100	Aluminum and aluminum-base alloy castings (rough and semifinished).....	...do.....	9.9	5.8	5.1	3.2
367010	Electron tubes, except X-ray.....	1,000.....	2.1	4.5	1.9	11.6
367410	Monolithic (solid state) integrated circuits.....	(X).....	(D)	(D)	(X)	-
367408	Solid state semiconductors.....	Millions.....	97.2	46.0	96.4	48.1
333977	Germanium.....	1,000 lbs.....	(D)	(D)	(NA)	(NA)
339913	Ferrites (powders and paste).....	Million lbs.....	(D)	(D)	(NA)	(NA)
282130	Thermoplastic resins including modified resins.....	Million lbs. dry basis.....	24.8	9.6	18.0	8.2
282140	Thermosetting resins (melamines, phenolics, polyesters, ureas, etc.....	...do.....	7.7	2.0	7.6	1.8
970099	All other materials and components, parts, containers, and supplies consumed <sup>1</sup> .....		(X)	782.9	(X)	490.0
976000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> .....		(X)	48.9	(X)	9.9

- Represents zero.

(D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or from related figures.

(NA) Not available. (X) Not applicable.

<sup>1</sup>Includes the value for materials shown by the symbol "D".<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3661, these small establishments accounted for less than 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



OFFICIAL BUSINESS

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# 1967 CENSUS OF MANUFACTURES



MC67(P)-36D-4

## INDUSTRY SERIES

### Radio and TV communication equipment

SIC Code 3662

**preliminary  
report**

The Radio and Television Transmitting, Signaling, and Detection Equipment and Apparatus Industry includes establishments primarily engaged in manufacturing (1) radio and television broadcasting equipment; (2) electric communication equipment and parts, except telephone and telegraph; (3) electronic field detection apparatus, light and heat emission operating apparatus, object detection apparatus and navigational electronic equipment, and aircraft and missile control systems; and (4) high energy particle accelerator systems and equipment designed and sold as a complete package for radiation therapy, irradiation, radiographic inspection, and research (linear accelerators, betatrons, dynamotrons, Vandergraff generators, resonant transformers, insulating core transformers, etc.); (5) high energy particle electronic equipment and accessories

sold separately for the construction of linear accelerators, cyclotrons, synchrotrons, and other high energy research installations (transmitters/modulators, accelerating waveguide structures, pulsed electron guns, vacuum systems, cooling systems, etc.); (6) other electric and electronic communication and signaling products, not elsewhere classified. Establishments primarily engaged in manufacturing transmitting tubes are classified in industry 3673.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classi-

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(per cent)	(per cent)
INDUSTRY 3662.--RADIO AND TV COMMUNICATION EQUIPMENT														
1967 Census....	1,306	789	420.3	3,664.4	226.8	460.1	1,551.4	5,618.4	3,502.6	8,822.8	261.8	2,146.7	85	92
1966 ASM <sup>1</sup> .....	(NA)	(NA)	373.4	3,086.8	205.1	415.5	1,335.6	4,855.3	3,032.0	7,562.6	187.9	1,745.8	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	352.9	2,813.9	185.7	378.7	1,179.3	4,349.1	2,568.3	6,861.6	147.6	1,430.2	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	353.3	2,638.7	181.7	367.6	1,170.1	4,258.1	2,318.0	6,510.2	124.5	1,301.4	(NA)	(NA)
1963 Census.....	1,132	635	387.4	2,840.2	205.7	419.1	1,230.7	4,327.7	2,822.9	7,145.6	138.7	1,331.9	88	91
1962 ASM <sup>1</sup> .....	(NA)	(NA)	348.4	2,575.8	178.1	380.7	1,207.6	3,914.7	2,900.2	6,663.7	114.3	993.4	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	307.7	2,162.5	150.0	326.3	915.9	3,160.6	2,578.5	5,682.5	112.9	806.2	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	239.7	1,602.6	127.1	277.8	738.6	2,399.5	2,143.7	4,458.3	97.9	659.1	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	187.1	1,186.9	107.0	220.7	568.9	1,831.1	1,788.8	3,540.8	79.5	550.5	(NA)	(NA)
1958 Census <sup>2</sup> ....	519	270	154.3	924.1	88.5	178.3	433.6	1,558.3	1,274.7	2,852.6	56.1	471.3	85	83

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued January 1970

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** **Maurice H. Stans, Secretary**  
**Rocco C. Siciliano, Under Secretary**  
**Harold C. Passer, Assistant Secretary for Economic Affairs**  
**BUREAU OF THE CENSUS** **George Hay Brown, Director**

fied in the Radio and TV Communication Equipment Industry amounted to \$8,822.8 million, an increase of 23 percent compared with 1963. Value added by manufacture at \$5,618.4 million in 1967 was 30 percent more than value added in 1963. Average employment in the industry showed an increase of 8 percent from 1963 to a total of 420.3 thousand employees in 1967.

Of the \$8,822.8 million total value of shipments and other receipts of establishments classified as radio and TV communication equipment, \$1,206.9 million were products primary to other industries; and \$1,033.0 million were receipts for miscellaneous activities. The industry shipments of primary products represented 85 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 88 percent in 1963.

The total value of radio and TV communication equipment shipped by all producers in 1967 was \$7,161.9 million of which \$6,582.9 million, or 92 percent, were shipped by plants classified in industry 3662, Radio and TV Communication Equipment, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 91 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

#### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3662, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-36N, Selected Electronics and Associated Products.



TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3662.--RADIO AND TV COMMUNICATION EQUIPMENT													
United States, total.....	1,306	789	420.3	3,664.4	226.8	460.1	1,551.4	5,618.4	3,502.6	8,822.8	261.8	387.4	4,327.7
Northeast.....	9	8	2.3	16.2	2.0	4.3	12.3	19.9	15.5	32.6	4.3	168.1	1,815.9
Massachusetts.....	99	70	28.8	243.3	15.7	31.5	109.8	418.6	230.3	648.0	10.9	(D)	(D)
North Central.....	541	346	177.0	1,600.2	95.8	192.2	691.3	2,449.4	1,481.2	3,818.9	103.5	58.1	618.4
Indiana.....	22	14	6.4	53.3	3.5	7.0	18.9	68.8	48.3	114.9	3.3	(D)	(D)
Illinois.....	75	40	15.7	102.5	10.0	20.1	51.9	190.2	168.8	360.8	15.0	(D)	(D)
Michigan.....	34	15	2.8	19.2	1.6	3.3	10.1	40.9	35.1	75.1	3.1	2.0	18.3
Nebraska.....	4	4	0.5	3.2	0.3	0.5	1.5	4.0	5.1	9.4	0.2	0.2	1.4
South.....	229	120	61.2	450.4	34.4	69.5	190.7	678.9	614.8	1,272.9	40.9	61.6	724.1
Maryland.....	35	28	22.3	201.6	10.2	20.9	69.5	254.1	166.0	420.6	20.7	(D)	(D)
North Carolina.....	9	5	4.6	31.6	2.9	5.5	16.6	58.5	52.6	116.6	2.2	(D)	(D)
Florida.....	38	24	14.2	104.3	7.5	15.3	42.9	168.9	91.7	246.1	10.4	10.1	112.9
Oklahoma.....	6	4	0.9	6.0	0.7	1.6	3.8	9.1	5.9	14.5	1.4	(D)	(D)
West.....	191	127	77.8	625.1	41.4	86.6	256.6	960.7	678.0	1,627.3	70.6	99.7	1,169.3
Mountain.....	39	23	11.0	92.3	7.0	14.5	46.8	147.2	83.8	235.5	3.6	4.6	43.6
New Mexico.....	9	4	0.5	4.3	0.3	0.6	1.7	8.3	2.7	11.0	0.1	0.3	2.1

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Value of Shipments by All Producers: 1967 and 1963

(Includes value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Value of shipments including interplant transfers (million dollars)	
		1967	1963
3662 --	Radio and TV communication equipment, total.....	7,161.9	6,031.2
	Commercial industrial, and military electronic communication equipment, except broadcast home-type intercommunication and telephone communication equipment:		
36621 00	As reported on the census of manufactures.....	1,444.1	1,016.1
	As reported on the census annual Form MA-36N <sup>1</sup> .....	1,472.7	980.5
36622 00	Radio and television broadcast equipment, and closed circuit systems:		
	As reported on the census of manufactures.....	342.9	149.7
	As reported on the census annual Form MA-36N <sup>1</sup> .....	<sup>2</sup> 317.0	143.4
36623 --	Intercommunication equipment (except telephone and telegraph) and electric alarm and signal systems and devices, total.....	238.0	165.8
	Intercommunication equipment (except telephone and telegraph) and electric alarm and signal systems and devices:		
36623 10	As reported on the census of manufactures.....	197.5	135.6
	As reported on the census annual Form MA-36N <sup>1</sup> .....	<sup>3</sup> 198.4	129.1
36623 21	Railroad highway grade crossing signals (exclusive of relays and other control apparatus).....	5.0	3.9
36623 29	Other railway signal systems and safety control equipment.....		24.5
36623 00	Intercommunication equipment (except telephone and telegraph) and electric alarm and signal systems, n.s.k. ....	35.5	1.8
36624 00	Electronic navigational aids except missile-borne and space vehicle-borne equipment:		
	As reported in the census of manufactures.....	1,077.6	1,261.7
	As reported on census annual Form MA-36N <sup>1</sup> .....	1,113.2	1,224.2
36625 00	Electronic search and detection apparatus, including radar, infrared and sonar:		
	As reported in the census of manufactures.....	1,638.3	1,615.0
	As reported on census annual Form MA-36N <sup>1</sup> .....	1,527.1	1,563.9
36626 00	Electronic military, industrial, and commercial equipment, n.e.c.:		
	As reported in the census of manufactures.....	1,181.2	724.5
	As reported on census annual Form MA-36N <sup>1</sup> .....	<sup>4</sup> 1,105.3	684.4
36627 00	Space Satellite-borne communication systems (complete package):		
	As reported in the census of manufactures.....	42.1	28.7
	As reported on census annual Form MA-36N <sup>1</sup> .....	<sup>5</sup> 38.4	28.4
36628 00	Missile-borne and space vehicle-borne navigation and guidance systems and equipment:		
	As reported in the census of manufactures.....	854.7	972.9
	As reported on census annual Form MA-36N <sup>1</sup> .....	<sup>6</sup> 864.7	961.4
36629 --	Microwave and mobile telephone (communication) equipment, total.....	169.2	64.8
36629 77	Microwave, telephone (communication) equipment.....	119.5	50.8
36629 79	Mobile telephone (communication) equipment.....	49.1	14.0
36629 00	Microwave and mobile telephone (communication) equipment, n.s.k. ....	0.6	-
36620 00	Radio and TV communication equipment, n.s.k. (For companies with 10 or more employees. See Note.)	161.9	32.0
36620 02	Radio and TV communication equipment, n.s.k. (For companies with less than 10 employees. See Note.).....	12.5	

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

- Represents zero. n.e.c. Not elsewhere classified. n.s.k. Not specified by kind.

<sup>1</sup>See Current Industrial Reports Series MA-36N, Selected Electronic and Associated Products, for detail product data.

<sup>2</sup>The value of shipments for product codes 3662223, 3662227, and 3662228 (combined) in Current Industrial Reports Series MA-36N has been revised to \$118,488 thousand.

<sup>3</sup>The value of shipments for product code 3662343, Electronic and electro-mechanical controllers, detectors, and sensors, including parts and accessories, in Current Industrial Reports Series MA-36N has been revised to \$28,782 thousand.

<sup>4</sup>The value of shipments for selected product codes in Current Industrial Reports Series MA-36N have been revised as follows:

Product code	Value of shipments (\$1,000)
3662697	426,358
3662681	146,390
3662696	30,755
3662661	99,992
65	
69	

<sup>5</sup>The value of shipments for product code 3662741, Space satellite-borne communications stations (complete package), in Current Industrial Reports Series MA-36N has been revised to \$38,357 thousand.

<sup>6</sup>The value of shipments for product code 3662812, Missile-borne and space vehicle-borne equipment, in Current Industrial Reports Series MA-36N has been revised to \$864,663 thousand.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3662.—RADIO AND TV COMMUNICATION EQUIPMENT					
	Materials, parts, containers, and supplies, total.....		(X)	3,062.3	(X)	2,468.7
	Mill shapes and forms, except castings:					
	Carbon steel:					
331012	Sheet and strip.....	1,000 short tons.	23.4	4.6	16.0	3.2
331011	Bars and bar shapes.....	..do.....	13.1	3.1	} (NA)	10.3
331015	Structural shapes.....	..do.....	16.1	3.2		
331017	Wire and wire products.....	..do.....	(NA)	3.9		
331019	All other carbon steel mill shapes and forms.....	..do.....	2.6	1.0		
	Alloy steel, except stainless:					
331021	Bars and bar shapes.....	..do.....	9.5	2.8	1.4	0.6
331029	All other alloy steel mill shapes and forms.....	..do.....	1.1	1.1	2.6	1.2
331031	Stainless steel.....	..do.....	3.2	4.7	2.0	3.2
	Copper and copper base alloy:					
335728	Bare wire (for electrical conduction only).....	Million lbs.....	5.2	3.6	4.4	3.4
335790	Insulated wire and cable.....	Million lbs. (copper content)	27.9	21.9	24.2	22.3
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	3.3	2.4	2.7	1.7
335123	Plate, sheet, and strip, including military cups and discs...	..do.....	1.9	1.6	1.4	1.3
335127	Pipe and tube.....	..do.....	2.0	1.5	1.2	0.9
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	..do.....	(NA)	11.7	13.4	8.8
335205	Extruded shapes including extruded rod, bar, pipe, tube, etc.	..do.....	21.4	14.1	8.9	6.0
335209	All other aluminum mill shapes and forms.....	..do.....	3.8	2.8	4.0	2.6
	Castings (rough and semifinished): <sup>1</sup>					
332300	Steel.....	1,000 short tons.	(NA)	11.4	14.9	8.1
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	21.7	21.8	11.2	13.9
336200	Copper and copper-base alloy.....	..do.....	1.9	1.8	1.1	1.2
339915	Metal powders.....	..do.....	2.2	0.4	(NA)	(NA)
	Fractional horsepower electric motors (under 1 hp.): <sup>1</sup>					
362110	Timing motors, synchronous and subsynchronous.....	1,000.....	(NA)	18.9	191.0	9.2
362115	Other fractional horsepower electric motors, excluding timing motors.....	..do.....	197.8	7.5	414.0	11.7
367010	Electron tubes, except X-ray <sup>1</sup> .....	Millions.....	35.4	69.8	55.9	66.5
367408	Solid state semiconductors <sup>1</sup> .....	..do.....	226.6	142.0	123.8	104.2
367410	Monolithic (solid state) integrated circuits.....	..do.....	(X)	55.1	(X)	(NA)
281995	Silicon, hyper pure.....	1,000 kilograms..	(D)	(D)	0.7	1.4
333977	Germanium.....	1,000 lbs.....	(D)	(D)	0.9	0.2
260091	Paper and paperboard containers.....	..do.....	(X)	12.4	(X)	6.1
329905	Mica.....	Pounds.....	(NA)	1.0	(NA)	(NA)
335606	Nickel and nickel-base alloy mill shapes and forms.....	Million lbs.....	0.9	1.0	0.3	0.7
339913	Ferrites (powder and paste).....	..do.....	(X)	0.4	(X)	2.1
	Glass and glass products:					
322921	Tube blanks.....	1,000.....	34.7	0.8	(D)	(D)
320311	Other than tube blanks.....	..do.....	(X)	2.3	(X)	1.4
367951	Fabricated electron tube parts, except blanks.....	..do.....	(X)	(D)	(X)	8.8
282130	Thermoplastic resins including modified resins.....	Million lbs.....	3.5	1.6	2.5	0.4
282140	Thermosetting resins (melamines, phenolics, polyesters, ureas, etc.).....	..do.....	8.6	3.2	(D)	(D)
970099	All other materials and components, parts, containers and sup- plies consumed.....	..do.....	(X)	2,204.1	(X)	2,032.5
976000	Materials, parts, containers and supplies, n.s.k. <sup>2</sup> .....	..do.....	(X)	423.2	(X)	134.8

(D) Data for these material codes are included with 970099, "All other materials and component parts containers and supplies consumed" in order to avoid disclosing figures for individual companies. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>No data are available for the quantities of castings, fractional horsepower electric motors, electron tubes and solid state semiconductors produced and consumed in the same establishment.

<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3662, these small establishments accounted for approximately 0.2 percent of payrolls and 0.1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.

# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the month specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

**U.S. DEPARTMENT OF COMMERCE**  
**Bureau of the Census**  
Washington, D.C. 20233

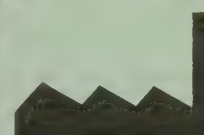
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# 1967 CENSUS OF MANUFACTURES



MC67(P)-36D-5

## INDUSTRY SERIES

**preliminary  
report**

### Electron tubes, receiving type SIC Code 3671

The Radio and Television Receiving Type Electron Tubes, Except Cathode Ray Industry includes establishments primarily engaged in manufacturing radio and television receiving type electron tubes, except cathode ray tubes. Establishments primarily engaged in manufacturing television receiving type cathode ray tubes are classified in industry 3672; transmitting tubes in industry 3673; X-ray tubes in industry 3693; and electronic equipment for home entertainment, except tubes, in industry 3651.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Electron Tubes, receiving type, Industry amounted to \$303.6 million, a decrease of 6 percent compared with 1963. Value added by manufacture at \$227.7 million in 1967 was 9 percent less than value added in 1963. Average employment in the industry showed a decrease of 18 percent from 1963 to a total of 21.2 thousand employees in 1967.

Of the \$303.6 million total value of shipments and other receipts of establishments classified as electron tubes, receiving type, \$41.0 million were products primary to other industries; and \$21.5 million were receipts for miscellaneous

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture  (million dollars)	Cost of materials  (million dollars)	Value of shipments  (million dollars)	Capital expenditures, new  (million dollars)	End-of-year inventories  (million dollars)	Specialization ratio  (percent)	Coverage ratio  (percent)
	Total  (number)	With 20 employees or more (number)	Number  (1,000)	Payroll  (million dollars)	Number  (1,000)	Man-hours  (millions)	Wages  (million dollars)							
INDUSTRY 3671.--ELECTRON TUBES, RECEIVING TYPE														
1967 Census....	40	20	21.2	119.5	18.1	32.8	86.8	227.7	73.3	303.6	7.0	28.5	86	94
1966 ASM <sup>1</sup> .....	(NA)	(NA)	24.3	140.8	20.7	41.2	103.4	243.7	86.3	336.1	8.3	28.1	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	22.3	123.7	18.3	35.3	86.2	214.3	74.5	294.2	6.9	35.8	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	21.9	118.6	17.9	33.5	79.1	202.3	68.0	279.9	4.2	40.7	(NA)	(NA)
1963 Census....	42	22	25.8	136.8	20.4	37.7	88.5	250.7	76.1	321.1	5.6	53.3	89	95
1962 ASM <sup>1</sup> .....	(NA)	(NA)	26.6	134.6	21.4	40.4	92.6	239.1	72.5	310.2	5.3	39.9	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	27.2	131.7	21.7	39.6	88.0	230.9	79.9	313.9	8.3	42.0	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	36.2	162.1	29.2	51.3	107.3	300.0	103.5	397.0	14.7	55.1	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	37.4	163.2	30.4	56.1	113.3	323.8	106.0	422.1	12.2	54.3	(NA)	(NA)
1958 Census <sup>2</sup> ...	85	41	37.0	149.5	30.9	57.3	110.7	285.8	92.3	382.5	11.5	44.6	89	96

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

**BUREAU OF THE CENSUS** George Hay Brown, Director

activities. The industry shipments of primary products represented 86 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 89 percent in 1963.

The total value of electron tubes, receiving type, shipped by all producers in 1967 was \$256.1 million of which \$241.1 million, or 94 percent, were shipped by plants classified in industry 3671, Electron Tubes, receiving type, while the

remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 95 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

#### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3671, the Census Bureau collects current statistics on products. These data appear in the Current Industrial Reports series:

MA-36N, "Selected Electronic and Associated Products"

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
INDUSTRY 3671.--ELECTRON TUBES, RECEIVING TYPE													
United States, total.....	40	20	21.2	119.5	18.1	32.8	86.8	227.7	73.3	303.6	7.0	25.8	250.7
North Central.....	8	3	3.7	17.9	3.2	5.8	14.4	43.5	11.1	55.6	0.9	(D)	(D)
California.....	5	1	0.1	0.4	0.1	0.1	0.3	0.8	0.2	1.0	(D)	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Value of Shipments by All Producers: 1967 and 1963

(Includes value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Value of shipments including interplant transfers (million dollars)	
		1967	1963
3671- --	ELECTRON TUBES, RECEIVING TYPE, TOTAL.....	256.1	287.9
36710 00	Electron tubes, receiving type, except cathode ray:		
	As reported in the census of manufactures.....	256.1	287.9
	As reported on Census Annual Form MA-36N.....	240.8	276.1
36710 11 36710 12 36710 13 36710 15	Receiving Tubes:		
	Standard, GT, and GT/G.....	40.9	58.7
	Miniature.....	162.2	177.0
	Sub miniature.....	37.7	14.2
	Other.....		26.2



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3671.--ELECTRON TUBES, RECEIVING TYPE					
	Materials, parts, containers, and supplies, total.....	.....	(X)	56.2	(X)	60.1
	Mill shapes and forms, except castings:					
	Carbon steel:					
331011	Bars and bar shapes.....	Thousand short tons.....	}	(1)	(1)	(1)
331012	Sheet and strip.....	..do.....				
331015	Structural shapes.....	..do.....				
331017	Wire and wire products.....	..do.....				
331019	All other carbon mill shapes and forms.....	..do.....				
	Alloy steel, except stainless:					
331021	Bars and bar shapes.....	..do.....	}	(1)	(1)	(1)
331029	All other alloy steel mill shapes and forms.....	..do.....				
331031	Stainless steel.....	..do.....				
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction only).....	Million lbs.....	(1)	(1)	(1)	(1)
335790	Insulated wire and cable.....	Million lbs. (copper content)	-	-	(1)	(1)
335102	Rod, bar and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	}	(1)	(1)	(1)
335123	Plate, sheet, and strip, including military cups and discs..	..do.....				
335127	Pipe and tube.....	..do.....				
	Fractional horsepower electric motors (under 1 hp.): <sup>2</sup>					
362110	Timing motors synchronous and subsynchronous.....	Thousands.....	(1)	(1)	(1)	(1)
362115	Other fractional horsepower electric motors, excluding timing motors.....	..do.....	(1)	(1)	(1)	(1)
367010	Electron tubes, except X-ray <sup>2</sup> .....	..do.....	(1)	(1)	(1)	(1)
367408	Solid state semiconductors <sup>2</sup> .....	..do.....	(1)	(1)	(1)	(1)
260091	Paper and paperboard containers.....		(X)	1.7	(X)	1.2
329905	Mica.....	Thousand pounds..	(1)	(1)	468.1	2.6
335606	Nickle and nickle-base alloy mill shapes and forms.....	Million lbs.....	1.3	1.9	1.4	3.0
335603	Molybdenum, rolled, drawn, or extruded.....	Thousand pounds..	23.5	1.9	30.5	2.0
335733	Tungsten wire.....		(X)	3.3	(X)	3.5
	Glass and glass products:					
322921	Tube blanks.....	Millions.....	240.5	3.3	331.4	3.3
320311	Other than tube blanks.....		(X)	1.3	(X)	1.7
397951	Fabricated electron tube parts, except blanks.....		(1)	(1)	(X)	26.2
282140	Thermosetting resins.....	1,000 lbs. (dry basis).....	(1)	(1)	-	-
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	<sup>1</sup> 41.0	(X)	<sup>1</sup> 15.6
976000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> .....		(X)	1.8	(X)	1.1

- Represents zero. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Included with material code 970099, "all other materials, etc" to avoid disclosing the operations of individual companies.<sup>2</sup>No data are available on the quantities of fractional horsepower electric motors, electron tubes (except x-ray) or solid state semiconductors produced and consumed in the same establishment.

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3671, these small establishments accounted for less than 1 percent of payrolls and value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the month specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

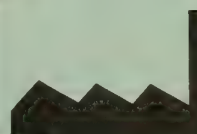
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-36D-6

## INDUSTRY SERIES

**preliminary  
report**

### Cathode ray picture tubes

SIC Code 3672

The Cathode Ray Picture Tubes Industry includes establishments primarily engaged in manufacturing television receiving type cathode ray tubes. Establishments primarily engaged in manufacturing other radio and television receiving type electron tubes are classified in industry 3671; and transmitting tubes in industry 3673.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Cathode Ray Picture Tubes Industry

amounted to \$835.1 million, an increase of 210.3 percent compared with 1963. Value added by manufacture at \$463.7 million in 1967 was 261.1 percent more than value added in 1963. Average employment in the industry showed an increase of 154.1 percent from 1963 to a total of 27.7 thousand employees in 1967.

Total value of shipments and other receipts of establishments classified as cathode ray picture tubes, was \$835.1 million. The industry shipments of primary products represented approximately 90-95 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 85-90 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture  (million dollars)	Cost of materials  (million dollars)	Value of shipments  (million dollars)	Capital expenditures, new  (million dollars)	End-of-year inventories  (million dollars)	Specialization ratio  (percent)	Coverage ratio  (percent)
	Total  (number)	With 20 employees or more (number)	Number  (1,000)	Payroll  (million dollars)	Number  (1,000)	Man-hours  (millions)	Wages  (million dollars)							
INDUSTRY 3672.--CATHODE RAY PICTURE TUBES														
1967 Census....	100	24	27.7	173.1	20.0	40.1	107.9	463.7	359.3	835.1	46.1	85.3	90-95	95-100
1966 ASM <sup>1</sup> .....	(NA)	(NA)	24.7	156.8	19.6	42.7	111.1	472.5	366.1	812.4	72.5	88.9	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	14.3	96.7	10.8	23.8	61.7	273.6	187.7	458.7	42.2	35.6	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	11.3	73.7	8.1	18.0	43.9	162.0	148.1	308.9	18.8	24.7	(NA)	(NA)
1963 Census....	151	28	10.9	66.9	8.0	16.6	40.5	128.4	142.1	269.1	16.1	23.2	85-90	90
1962 ASM <sup>1</sup> .....	(NA)	(NA)	6.8	40.2	5.4	11.2	27.5	63.4	104.3	167.9	3.7	13.8	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	7.5	41.1	6.1	12.5	28.7	84.1	103.1	183.5	*4.7	20.0	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	8.0	43.0	6.6	13.3	31.0	77.1	104.0	179.9	3.1	18.9	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	7.6	40.3	6.1	12.8	28.8	82.5	100.2	183.2	(S)	21.6	(NA)	(NA)
1958 Census <sup>2</sup> ...	75	30	8.6	38.1	7.0	14.2	27.6	67.5	92.0	159.3	1.8	17.5	96	84

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

(S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary  
**Rocco C. Siciliano**, Under Secretary  
**BUREAU OF THE CENSUS** George Hay Brown, Director



The total value of cathode ray picture tubes shipped by all producers in 1967 was \$752.0 million of which approximately 95-100 percent, were shipped by plants classified in industry 3672, Cathode Ray Picture Tubes, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 90 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3672, the Census Bureau collects current statistics on products. These data appear in the Current Industrial Reports series:

MA-36N Selected Electronic and Associated Products.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

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Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Value of shipments including interplant transfers (million dollars)	
		1967	1963
3672- --	CATHODE RAY PICTURE TUBES, TOTAL.....	752.0	248.5
36720 00	Cathode ray picture tubes, including rebuilt: As reported in the census of manufactures..... As reported on Census annual Form MA-36N.....	752.0 738.4	248.5 243.3
36720 13	Television picture tubes, including rebuilt tubes: Black and white.....	179.1	243.3
36720 15	Color.....	659.3	

<sup>1</sup>Revised.

<sup>2</sup>Represents 4,692 thousand units.

<sup>3</sup>Represents 5,643 thousand units.

<sup>4</sup>Represents 10,207 thousand units.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix. "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3672.--CATHODE RAY PICTURE TUBES					
	Materials, parts, containers and supplies, total.....		(X)	342.5	(X)	138.3
	Mill shapes and forms, except castings:					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	(D)	(D)	(D)	(D)
331012	Sheet and strip.....	..do.....	(D)	(D)	(D)	(D)
331015	Structural shapes.....	..do.....	(D)	(D)	(D)	(D)
331017	Wire and wire products.....	..do.....	(D)	(D)	(D)	(D)
331019	All other carbon steel mill shapes and forms.....	..do.....	(D)	(D)	(D)	(D)
	Alloy steel, except stainless:					
331021	Bars and bar shapes.....	..do.....	(D)	(D)	(D)	(D)
331029	All other alloy steel mill shapes and forms.....	..do.....	(D)	(D)	(D)	(D)
331031	Stainless steel.....	..do.....	(D)	(D)	(D)	(D)
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction only).....	Million lbs.....	(D)	(D)	(NA)	(NA)
335790	Insulated wire and cable.....	Million lbs. (copper content)	(D)	(D)	(NA)	(NA)
336102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	(D)	(D)	(D)	(D)
335123	Plate, sheet, and strip, including military cups and discs...	..do.....	(D)	(D)	(D)	(D)
335127	Pipe and tube.....	..do.....	(D)	(D)	(D)	(D)
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	..do.....	(D)	(D)	(D)	(D)
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	..do.....	(D)	(D)	(D)	(D)
335209	All other aluminum mill shapes and forms.....	..do.....	(D)	(D)	(D)	(D)
367010	Electron tubes, except X-ray <sup>1</sup> .....	1,000.....	22.0	0.1	105.3	0.8
260091	Paper and paperboard containers.....		(X)	4.7	(X)	(D)
	Glass and glass products:					
322921	Tube blanks.....	Millions.....	194.7	210.0	49.2	61.8
320311	Other than tube blanks.....		(X)	(D)	(X)	(D)
367951	Fabricated electron tube parts, except blanks.....		(X)	(D)	(X)	7.2
282130	Thermoplastic resins including modified resins.....	1,000 lbs. (dry basis).....	(X)	(D)	(NA)	(NA)
282140	Thermosetting resins.....	..do.....	5.3	2.1	(NA)	(NA)
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	121.4	(X)	65.2
976000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> .....		(X)	4.2	(X)	3.4

(D) Included with 970099 "All other materials etc." to avoid disclosing the operation of individual companies.

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>No data are available on the quantities of electron tubes produced and consumed in the same establishment.

<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3672, these small establishments accounted for less than 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

**Textile mill products • Apparel and leather • Chemicals, rubber, and plastics • Machinery and equipment • Primary metals • Intermediate metal products • Processed foods • Lumber, furniture, and paper products • Stone, clay, and glass products.**

A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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# 1967 CENSUS OF MANUFACTURES

MC67(P)-36D-7



## INDUSTRY SERIES

**preliminary  
report**

### Electron tubes, transmitting

SIC Code 3673

The Transmitting, Industrial, and Special Purpose Electron Tubes, Industry includes establishments primarily engaged in manufacturing transmitting, industrial, and special purpose electron tubes. Establishments primarily engaged in manufacturing radio and television transmitting equipment are classified in industry 3662; radio and television receiving tubes in industry 3671; television receiving type cathode ray tubes in industry 3672; and X-ray tubes in industry 3693.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classi-

fied in the Electron Tubes, Transmitting, Industry amounted to \$373.5 million, an increase of 25 percent compared with 1963. Value added by manufacture at \$243.1 million in 1967 was 19 percent more than value added in 1963. Average employment in the industry showed a decrease of 1 percent from 1963 to a total of 18.4 thousand employees in 1967.

Of the \$373.5 million total value of shipments and other receipts of establishments classified as electron tubes, transmitting, \$70.3 million were products primary to other industries; and \$43.8 million were receipts for miscellaneous activities. The industry shipments of primary products represented 79 percent of the total manufactured product shipments, primary and

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3673.--ELECTRON TUBES, TRANSMITTING														
1967 Census....	57	39	18.4	147.8	12.7	26.2	84.4	243.1	129.1	373.5	13.3	84.5	79	72
1966 ASM <sup>1</sup> .....	(NA)	(NA)	19.5	150.9	13.3	26.5	86.3	251.9	127.6	369.9	18.4	88.9	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	17.4	135.4	11.4	23.3	73.3	210.5	102.7	306.3	10.6	74.4	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	16.7	120.4	10.5	21.6	67.4	192.4	87.2	280.0	9.8	67.5	(NA)	(NA)
1963 Census.....	57	45	18.7	129.3	11.6	24.0	72.4	204.6	96.3	299.5	13.3	74.2	80	75
1962 ASM <sup>1</sup> .....	(NA)	(NA)	25.0	157.4	15.2	31.1	84.5	276.8	131.6	404.9	18.6	87.0	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	23.3	140.8	14.2	29.1	75.5	225.2	112.9	335.5	16.7	84.4	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	22.3	125.5	13.7	27.7	66.5	203.5	100.4	292.8	20.2	81.2	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	22.7	123.2	14.5	29.7	69.3	201.3	98.5	291.9	11.8	70.3	(NA)	(NA)
1958 Census <sup>2</sup> ...	48	44	20.1	102.1	14.5	29.5	65.1	165.8	90.7	258.5	9.0	59.9	83	81

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director

secondary. This percent, called the specialization ratio for the industry, was 80 percent in 1963.

The total value of electron tubes, transmitting shipped by all producers in 1967 was \$360.7 million of which \$259.4 million, or 72 percent, were shipped by plants classified in industry 3673, Electron Tubes, Transmitting, while the remainder was shipped by plants classified in

other industries. This percent, called the coverage ratio, was 75 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3673, the Census Bureau collects current statistics on products. These data appear in the Current Industrial Reports series:

MA-36N, Selected Electronic and Associated Products.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture  (million dollars)	Cost of materials  (million dollars)	Value of shipments  (million dollars)	Capital expenditures, new  (million dollars)	All employees  (1,000)	Value added by manufacture  (million dollars)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
	INDUSTRY 3673.--ELECTRON TUBES, TRANSMITTING												
United States, total.....	57	39	18.4	147.8	12.7	26.2	84.4	143.1	129.1	373.5	13.3	18.7	204.6
Northeast.....	27	20	7.7	59.0	5.2	10.7	33.3	101.6	71.3	171.1	4.7	9.0	93.5
East North Central....	8	4	0.8	5.0	0.5	1.0	2.3	8.6	2.8	11.5	0.4	0.4	2.7
South.....	5	4	1.5	9.0	1.1	2.3	6.1	12.4	10.6	23.7	0.7	(D)	(D)
West.....	17	11	8.5	74.7	5.8	12.3	42.7	120.5	44.3	167.1	7.4	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000 units)	Value (million dollars)	Quantity (1,000 units)	Value (million dollars)
3673- --	ELECTRON TUBES, TRANSMITTING, TOTAL.....	(X)	360.7	(X)	286.7
	Transmittal, industrial, and special purpose electron tubes:				
36730 00	As reported in the census of manufactures.....	(X)	360.7	(X)	286.7
	As reported on census annual Form MA-36N.....	(X)	358.5	(X)	281.4
36730 11	High vacuum tubes.....	3,616.6	70.9	3,154.8	62.6
36730 22	Gas and vapor tubes.....	1,829.6	23.8	(NA)	27.2
36730 27	Klystrons.....	(X)	43.8	(X)	52.4
36730 51	Magnetrons.....	100.6	43.8	68.3	38.6
36730 91	Forward wave tubes.....	29.6	49.8	19.6	39.2
36730 92	Backward wave tubes.....	14.0	21.5	6.9	12.5
36730 93	Light sensing tubes.....	(X)	49.9	(X)	20.1
36730 94	Light emitting and special purpose display tubes.....	231.0	11.8	160.4	8.4
36730 95	Storage tubes.....	(X)	24.2	249.9	14.8
36730 96	Miscellaneous special purpose tubes.....	(X)	19.0	(X)	5.6

(NA) Not available. (X) Not applicable.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
INDUSTRY 3673.--ELECTRON TUBES, TRANSMITTING						
	Materials, parts, containers and supplies, total.....		(X)	99.2	(X)	73.9
	Mill shapes and forms, except castings:					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 tons.....	4.3	3.2	0.1	0.3
331012	Sheet and strip.....	..do.....				
331015	Structural shapes.....	..do.....				
331017	Wire and wire products.....	..do.....				
331019	All other carbon steel mill shapes and forms.....	..do.....				
	Alloy steel, except stainless:					
331021	Bars and bar shapes.....	..do.....	4.3	3.2	(Z)	0.1
331029	All other alloy steel mill shapes and forms.....	..do.....				
331031	Stainless steel.....	..do.....				
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction only).....	Million lbs.....	(D)	(D)	0.1	0.1
335790	Insulated wire and cable, copper content only.....	..do.....	(D)	(D)		
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	..do.....	0.7	0.8	0.7	0.7
335123	Plate, sheet, and strip, including military cups and discs...	..do.....	0.7	0.9	0.8	0.8
335127	Pipe and tube.....	..do.....	0.2	0.2	0.4	0.4
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	..do.....	0.2	0.2	0.3	0.4
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	..do.....	0.2	0.5	0.1	0.2
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, and welded tubing, etc.).....	..do.....				
	Castings (rough and semifinished): <sup>1</sup>					
332300	Steel.....	1,000 tons.....	(D)	(D)	0.1	0.1
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	(Z)	(Z)	1.1	0.1
336200	Copper and copper-base alloy.....	..do.....	(D)	(D)	(D)	(D)
339915	Metal powders.....	..do.....	(D)	(D)	-	-
	Fractional horsepower electric motors (under 1 hp.): <sup>1</sup>					
362110	Timing motors, synchronous and subsynchronous.....	1,000.....	(D)	(D)	(D)	(D)
362115	Other fractional horsepower electric motors, excluding timing motors.....	..do.....	(D)	(D)	(D)	(D)
367010	Electron tubes, except X-ray <sup>1</sup> .....	Millions.....	1.7	0.4	9.1	2.5
367408	Solid state semiconductors <sup>1</sup> .....	..do.....	4.5	0.8	2.0	0.5
333977	Germanium.....	pounds.....	-	-	(D)	(D)
260091	Paper and paperboard containers.....	..do.....	(X)	0.6	(X)	0.5
329905	Mica.....	1,000 pounds.....	(Z)	(Z)	(D)	(D)
335606	Nickel and nickel-base alloy mill shapes and forms.....	Million lbs.....	0.4	1.3	0.3	0.8
335602	Tantalum mill products.....	1,000 pounds.....	4.1	0.1	3.4	0.2
335603	Molybdenum, rolled, drawn or extruded.....	..do.....	17.3	0.7	36.3	0.8
335733	Tungsten wire.....	Million meters...	1.5	0.3	1.2	0.3
	Glass and glass products:					
322921	Tube blanks.....	Millions.....	0.7	4.4	(NA)	(NA)
320311	Other than tube blanks.....	..do.....	(X)	1.0	(X)	(NA)
367951	Fabricated electron tube parts except blanks.....	..do.....	(X)	31.0	(X)	25.8
970099	All other materials and components, parts, containers, and supplies consumed.....	..do.....	(X)	47.7	(X)	36.4
976000	Materials, parts, containers, and supplies, n.s.k.....	..do.....	(X)	5.1	(X)	2.3

-Represents zero. (D) Included with material code 970099 "All other materials and components, etc." to avoid disclosing the operations of individual companies. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable. (Z) Less than 0.1 when rounded.

<sup>1</sup>No data are available on the quantities of castings, fractional horsepower electric motors, electron tubes or solid state semiconductors produced and consumed in the same establishment.

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The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3673, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

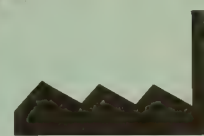
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

### Semiconductors

SIC Code 3674

**preliminary  
report**

The Semiconductors and Related Devices Industry includes establishments primarily engaged in manufacturing semiconductor and related solid state devices, such as semiconductor diodes and stacks, including rectifiers, integrated microcircuits (semiconductor networks), transistors, solar cells, and light sensitive semiconductor (solid state) devices.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Semiconductors Industry amounted to \$1,180.5 million, an increase of 72 percent

compared with 1963. Value added by manufacture at \$849.2 million in 1967 was 82 percent more than value added in 1963. Average employment in the industry showed an increase of 54 percent from 1963 to a total of 86.5 thousand employees in 1967.

Of the \$1,180.5 million total value of shipments and other receipts of establishments classified as semiconductors, \$86.7 million were products primary to other industries; and \$25.2 million were receipts for miscellaneous activities. The industry shipments of primary products represented 92 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 88 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture  (million dollars)	Cost of materials  (million dollars)	Value of shipments  (million dollars)	Capital expenditures, new  (million dollars)	End-of-year inventories  (million dollars)	Specialization ratio  (percent)	Coverage ratio  (percent)
	Total  (number)	With 20 employees or more (number)	Number  (1,000)	Payroll  (million dollars)	Number  (1,000)	Man-hours  (millions)	Wages  (million dollars)							
INDUSTRY 3674. --SEMICONDUCTORS														
1967 Census....	180	121	86.5	551.1	58.3	119.0	309.5	849.2	341.9	1,180.5	132.6	219.8	92	88
1966 ASM <sup>1</sup> .....	(NA)	(NA)	82.2	494.2	59.1	118.1	274.3	835.3	316.7	1,123.7	123.6	189.1	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	67.4	401.4	48.7	98.9	228.0	680.1	241.5	911.7	61.3	149.8	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	55.3	327.2	37.9	77.4	176.0	514.8	205.1	716.4	43.4	124.7	(NA)	(NA)
1963 Census <sup>2</sup> ...	107	87	56.3	320.9	37.5	77.1	168.5	467.0	199.4	687.8	52.4	118.2	88	92
1962 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1958 Census <sup>2</sup> ...	48	42	23.4	113.0	17.6	34.7	65.9	186.8	75.5	250.3	16.2	(NA)	(NA)	(NA)

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>This industry was included in industry 3679 in the 1958 Census of Manufactures. Accordingly, no estimates are available for 1959-1962, or for years prior to 1958. The figures for 1958 are based on a special tabulation.

Issued December 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

Harold C. Passer, Assistant Secretary for Economic Affairs

**BUREAU OF THE CENSUS** George Hay Brown, Director

The total value of semiconductors shipped by all producers in 1967 was \$1,221.2 million of which \$1,068.6 million, or 88 percent, were shipped by plants classified in industry 3674, Semiconductors, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 92 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3674, the Census Bureau collects current statistics on products. These data appear in the Current Industrial Reports series:

MA-36N, Selected Electronic and Associated Products.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
	INDUSTRY 3674. --SEMICONDUCTORS												
United States, total.....	180	121	86.5	551.1	58.3	119.0	309.5	849.2	341.9	1,180.5	132.6	56.3	467.0
New York.....	19	12	7.1	42.3	4.8	9.0	22.6	64.1	36.0	102.4	6.8	4.6	45.6
New Jersey.....	14	9	4.0	29.6	2.3	4.5	11.4	26.5	12.3	38.5	(D)	3.7	24.0
North Central.....	20	10	2.8	13.9	2.4	4.4	10.1	24.8	10.0	34.5	(D)	(D)	(D)
West.....	55	41	29.9	204.4	17.0	36.6	101.8	350.3	89.4	431.5	43.9	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Value of shipments including interplant transfers (million dollars)	
		1967	1963
3674- --	SEMICONDUCTORS, TOTAL.....	1,221.2	623.3
	Semiconductor devices:		
	As reported in the census of manufactures.....	1,221.2	623.3
	As reported on census annual form MA-36N.....	<sup>1</sup> 1,148.4	617.5
36741 00	Integrated microcircuits (semiconductor networks):		
	As reported in the census of manufactures.....	282.5	
	As reported on Census annual Form MA-36N <sup>2</sup> .....	<sup>1</sup> 266.2	
36742 00	Transistors:		
	As reported in the census of manufactures.....	440.7	
	As reported on Census annual Form MA-36N <sup>2</sup> .....	425.5	
36743 00	Diodes and rectifiers:		
	As reported in the census of manufactures.....	294.5	
	As reported on Census annual Form MA-36N <sup>2</sup> .....	<sup>1</sup> 275.8	
36749 00	Other semiconductor devices:		
	As reported in the census of manufactures.....	199.0	
	As reported on Census annual Form MA-36N <sup>2</sup> .....	180.9	
36740 00	Semiconductor devices, n. s. k. (Represents establishments with 10 or more employees in 1967. See Note.).....	3.5	
36740 02	Semiconductor devices, n. s. k. (Represents establishments with less than 10 employees in 1967. See Note.).....	1.0	(X)

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

<sup>1</sup>The following represent revisions to the MA-36N data for 1967:

Census product code	Product	Quantity (million units)	Value (million dollars)
36741 --	Semiconductor circuit networks, total.....	(X)	266.2
	Digital:		
	Monolithic.....	413.4	213.3
3674115	Chip.....	1.9	5.3
	Analog:		
3674123	Monolithic.....	10.0	39.3
3674125	Chip.....	59.6	8.3
37643--	Diodes, including rectifier and related devices, total.....	(X)	275.8
	Diodes, general purpose, switching, and rectifiers:		
3774323	Silicon.....	932.6	215.0
3674343	Germanium.....	498.9	46.1

<sup>2</sup>See Current Industrial Reports Series MA-36N, Selected Electronic and Associated Products for detail product data.



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963		
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)	
INDUSTRY 3674.--SEMICONDUCTORS							
	Materials, parts, containers and supplies, total.....		(X)	308.6	(X)	183.3	
	Mill shapes and forms, except castings:						
	Carbon steel:						
331011	Bars and bar shapes.....	1,000 short tons.	4.9	2.4	1.5	0.7	
331012	Sheet and strip.....	..do.....					
331015	Structural shapes.....	..do.....					
331017	Wire and wire products.....	..do.....					
331019	All other carbon steel mill shapes and forms.....	..do.....					
	Alloy steel, except stainless:						
331021	Bars and bar shapes.....	..do.....	3.2	9.9	1.1	3.3	
331029	All other alloy steel mill shapes and forms.....	..do.....					
331031	Stainless steel.....	..do.....					
	Copper and copper-base alloy:						
335728	Bare wire (for electrical conduction only).....	Million lbs.....	1.0	2.5	0.6	0.6	
335790	Insulated wire and cable.....	Million lbs. copper content..	0.6	0.4	0.1	0.3	
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	1.6	2.4	0.6	0.8	
335123	Plate, sheet, and strip, including military cups and discs..	..do.....					
335127	Pipe and tube.....	..do.....					
	Aluminum and aluminum-base alloy:						
335202	Sheet, plate and foil.....	..do.....	0.4	0.3	0.3	0.3	
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	..do.....	0.3	0.2			
335209	All other aluminum mill shapes and forms.....	..do.....	0.1	0.1			
	Castings (rough and semifinished): <sup>1</sup>						
332300	Steel.....	1,000 short tons.	(D)	(D)	(D)	(D)	
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	(D)	(D)	(D)	(D)	
336200	Copper and copper-base alloy.....	..do.....	(D)	(D)	(D)	(D)	
339915	Metal powders.....	..do.....	(D)	(D)	(NA)	(NA)	
	Fractional horsepower electric motors (under 1 hp): <sup>1</sup>						
362110	Timing motors synchronous and subsynchronous.....	1,000.....	-	-	(D)	(D)	
362115	Other fractional horsepower electric motors, excluding timing motors.....	..do.....	0.8	0.1	(D)	(D)	
367010	Electron tubes, except X-ray <sup>1</sup> .....	Millions.....	(NA)	0.1	0.1	0.3	
367408	Solid state semiconductors <sup>1</sup> .....	..do.....	16.1	4.6	8.7	2.4	
281995	Silicon, hyperpure.....	Kilograms.....	612.9	21.5	345.7	11.8	
333977	Germanium.....	1,000 pounds.....	83.4	7.6	51.8	6.5	
260091	Paper and paperboard containers.....	(X)	(X)	1.6	(X)	1.5	
335606	Nickel and nickel base-alloy mill shapes and forms.....	Million lbs.....	1.3	3.8	0.5	1.9	
335602	Tantalum mill products.....	1,000 lbs.....	(NA)	0.7	(NA)	1.2	
335603	Molybdenum, rolled, drawn, or extruded.....	..do.....	25.4	0.6	24.4	0.4	
335733	Tungsten wire.....	Million meters..	(NA)	0.1	(NA)	0.2	
	Glass and glass products:						
322921	Tube blanks.....	Millions.....	328.9	7.6	291.1	6.1	
320311	Other than tube blanks.....	..do.....	(X)	3.0	(X)	4.4	
367951	Fabricated electron tube parts except blanks.....	..do.....	(X)	6.8	}	(X)	140.6
282130	Thermoplastic resins including modified resins.....	Million lbs. (dry basis).....	1.9	0.6			
282140	Thermosetting resins.....	..do.....	3.1	0.1			
970099	All other materials and components, parts, containers, and sup- plies consumed.....	..do.....	(X)	205.3			
976000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> .....	..do.....	(X)	26.3			

- Represents zero. (D) Included with material code 970099 "All other materials, etc." to avoid disclosing operations of individual companies.

(NA) Not available. (X) Not applicable.

<sup>1</sup>No data are available on the quantities of castings, fractional horsepower electric motors, electron tubes or solid state semiconductors produced and consumed in the same establishment.<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

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As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

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More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

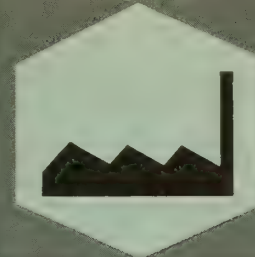
**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# 1967 CENSUS OF MANUFACTURES



MC67(P)-36D-9

## INDUSTRY SERIES

**preliminary  
report**

### Electronic components, n.e.c. SIC Code 3679

The Electronic Components and Accessories, Not Elsewhere Classified, Industry includes establishments primarily engaged in manufacturing specialty resistors for electronic end products; electronic inductors, transformers, and capacitors; and other electronic components, not elsewhere classified. Establishments primarily engaged in manufacturing resistors, inductors, and transformers for telephone and telegraph apparatus are classified in industry 3661; electric lamps in industry 3641; and semiconductor (solid state) and related devices in industry 3674.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Electronic Components, N.E.C., Industry amounted to \$4,915.6 million, an increase of 111 percent compared with 1963. Value added by manufacture at \$2,676.5 million in 1967 was 84 percent more than value added in 1963. Average employment in the industry showed an increase of 44 percent from 1963 to a total of 254.3 thousand employees in 1967.

Of the \$4,915.6 million total value of shipments and other receipts of establishments classified as electronic components, n.e.c., \$803.2 million were products primary to other industries; and \$280.2 million were receipts for miscellaneous activities. The industry shipments of

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)
INDUSTRY 3679.--ELECTRONIC COMPONENTS, N. E. C.														
1967 Census....	2,079	1,223	254.3	1,471.1	187.4	364.5	875.9	2,676.5	2,276.8	4,915.6	181.0	891.6	83	87
1966 ASM <sup>1</sup> .....	(NA)	(NA)	233.8	1,255.7	185.3	373.9	805.7	2,419.2	1,684.0	4,001.8	171.7	706.7	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	199.2	1,029.1	152.9	308.4	655.9	1,890.3	1,301.8	3,075.0	142.4	534.9	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	165.2	871.6	124.4	252.3	551.1	1,423.7	912.7	2,328.1	135.8	419.9	(NA)	(NA)
1963 Census....	1,934	968	176.7	881.9	133.4	261.7	550.8	1,457.4	889.5	2,332.2	88.5	392.0	89	78
1962 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1958 Census <sup>2</sup> ...	1,431	695	108.9	451.0	85.3	166.7	301.4	728.0	473.5	1,195.4	35.7	(NA)	(NA)	(NA)

(NA) Not available. n.e.c. Not elsewhere classified.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued January 1970

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**



primary products represented 83 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 89 percent in 1963.

The total value of electronic components, n.e.c., shipped by all producers in 1967 was \$4,382.9 million of which \$3,832.2 million, or 87 percent, were shipped by plants classified in industry 3679, Electronic Components, N.E.C.,

while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 78 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3679, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-36N, Selected Electronic and Associated Products.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967										1963		
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3679.--ELECTRONIC COMPONENTS, N. E. C.												
United States, total.....	2,079	1,223	254.3	1,471.1	187.4	364.5	875.9	2,676.5	2,276.8	4,915.6	181.0	176.7	1,457.4
New England.....	281	181	42.6	245.0	30.3	59.6	137.3	447.2	379.0	820.9	35.4	32.4	238.0
Massachusetts.....	157	100	21.1	120.4	15.6	30.1	72.0	191.8	119.8	309.5	14.9	17.0	124.0
Connecticut.....	79	48	10.3	60.2	7.1	14.5	32.5	98.4	55.5	157.0	6.7	9.2	67.6
Middle Atlantic.....	564	331	77.7	502.7	52.5	103.1	271.2	889.4	1,114.6	1,999.8	48.6	49.1	440.1
New York.....	237	142	45.7	327.0	27.9	55.4	157.4	544.5	914.8	1,458.4	28.2	25.8	219.2
New Jersey.....	201	107	14.5	82.6	11.0	21.1	50.4	168.4	100.1	263.6	(D)	11.3	104.4
Pennsylvania.....	126	82	17.5	93.1	13.6	26.6	63.5	176.5	99.7	277.9	(D)	12.0	116.5
East North Central....	373	249	50.8	260.8	41.4	78.6	177.5	459.8	335.5	791.3	33.3	(D)	(D)
Illinois.....	182	129	23.4	117.1	18.9	36.1	77.6	222.3	137.9	358.0	12.7	20.3	139.3
South Atlantic.....	160	106	22.8	110.0	18.0	34.9	71.7	199.0	95.0	289.5	16.1	(D)	(D)
South Carolina.....	10	9	5.4	23.4	4.4	8.5	15.9	42.6	24.7	67.2	4.4	(D)	(D)
East South Central....	29	21	4.6	21.5	3.9	8.2	15.5	40.5	27.7	67.6	(D)	(D)	(D)
Tennessee.....	14	10	1.8	7.6	1.7	3.4	5.8	12.6	7.0	19.8	(D)	1.1	5.7
West.....	512	243	40.0	251.7	29.1	56.0	150.2	474.4	247.2	706.7	33.3	27.9	267.8
California.....	451	213	34.9	224.5	25.2	48.5	133.3	429.8	227.0	644.7	(D)	26.5	256.2

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.  
n.e.c. Not elsewhere classified.

TABLE 3. Value of Shipments by All Producers: 1967 and 1963

(Includes value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Value (million dollars)	
		1967	1963
3679- --	ELECTRONIC COMPONENTS, N. E. C., TOTAL.....	4,382.9	2,501.3
	Capacitors for electronic applications:		
36792 00	As reported in the Census of Manufactures.....	430.5	318.8
	As reported on Census annual Form MA-36N <sup>1</sup> .....	400.6	305.9
	Resistors for electronic applications:		
36793 00	As reported in the Census of Manufactures.....	438.2	312.6
	As reported on Census annual Form MA-36N <sup>1</sup> .....	414.3	312.4
	Coils, transformers, reactors, and chokes for electronic applications:		
36794 00	As reported in the Census of Manufactures.....	512.0	274.4
	As reported on Census annual Form MA-36N <sup>1</sup> .....	<sup>2</sup> 488.3	259.3
36795 --	Other electronic components and accessories, n.e.c., including parts for electron tubes (except glass blanks).....	2,756.5	1,496.7
	Electronic components, n.e.c. except phonograph needles and cutting styli:		
36795 10	As reported in the Census of Manufactures.....	2,732.4	<sup>r</sup> 1,475.1
	As reported on Census annual Form MA-36N <sup>1</sup> .....	<sup>3</sup> 2,470.4	1,342.0
36795 47	Phonograph needles and cutting styli.....	13.5	<sup>r</sup> 21.6
36795 00	Other electronic components and accessories, n.e.c. including parts for electron tubes (except glass blanks) n. s. k. ....	10.6	-
36790 00	Electronic components, n. s. k. (For companies with 10 or more employees. See Note.).....	224.7	98.8
36790 02	Electronic components, n. s. k. (For companies with less than 10 employees. See Note.).....	21.0	

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short-form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000". Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

- Represents zero. n.e.c. Not elsewhere classified. n.s.k. Not specified by kind. <sup>r</sup>Revised.

<sup>1</sup>See Current Industrial Reports Series MA-36N, Selected Electronic and Associated Products, for detailed statistics on products.

<sup>2</sup>The value of shipments for the following product codes in Current Industrial Reports Series MA-36N have been revised:

Code	(\$1,000)
36794 71.....	232,954
36794 41.....	66,899

<sup>3</sup>The value of shipments for the following product codes in Current Industrial Reports Series MA-36N have been revised:

Code	(\$1,000)
36795 39.....	351,218
36795 54.....	9,810
36795 52.....	78,189
36795 95.....	59,297
36795 35.....	62,124
36795 01.....	43,506
36795 02.....	93,439
36795 03.....	20,340
36795 04.....	18,289

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3679.--ELECTRONIC COMPONENTS, N. E. C.					
	Materials, parts, containers, and supplies, total.....		(X)	2,030.9	(X)	754.7
	Mill shapes and forms, except castings:					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons..	6.4	1.7	3.9	1.2
331012	Sheet and strip.....	..do.....	35.6	11.3	40.6	9.8
331015	Structural shapes.....	..do.....	0.9	0.7	0.8	0.3
331017	Wire and wire products.....	..do.....	(NA)	12.4	7.9	3.0
331019	All other carbon steel mill shapes and forms.....	..do.....	3.1	2.2	7.3	3.6
	Alloy steel, except stainless:					
331021	Bars and bar shapes.....	..do.....	4.2	3.7	0.8	0.5
331029	All other alloy steel mill shapes and forms.....	..do.....	21.5	12.0	22.2	11.5
331031	Stainless steel.....	..do.....	3.2	5.6	1.6	2.4
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction only).....	Million pounds....	33.5	31.7	16.7	11.1
335790	Insulated wire and cable, copper content only.....	..do.....	37.1	34.4	26.3	18.1
335102	Rod, bar and mechanical wire, including extruded and/or drawn shapes.....	..do.....	22.1	13.0	15.6	7.3
335123	Plate sheet and strip, including military cups and discs....	..do.....	(NA)	7.5	12.2	7.1
335127	Pipe and tube.....	..do.....	5.3	4.9	4.9	3.3
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	..do.....	24.6	18.6	23.3	15.4
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	..do.....	11.0	7.9	15.7	12.6
335209	All other aluminum mill shapes and forms.....	..do.....	9.6	9.3	4.4	3.6
	Castings (rough and semifinished): <sup>1</sup>					
332300	Steel.....	1,000 short tons..	(NA)	2.2	0.9	0.6
336100	Aluminum and aluminum-base alloy.....	Million pounds....	5.3	5.0	2.0	3.9
336200	Copper and copper-base alloy.....	..do.....	11.2	9.0	0.5	0.5
339915	Metal powders.....	..do.....	21.7	7.5	(NA)	(NA)
	Fractional horsepower electric motors (under 1 hp.): <sup>1</sup>					
362110	Timing motors, synchronous and subsynchronous.....	1,000.....	194.6	2.1	(D)	(D)
362115	Other fractional horsepower electric motors, excluding timing motors.....	..do.....	(D)	(D)	426.0	1.4
367010	Electron tubes, except X-ray <sup>1</sup> .....	Millions.....	8.3	6.9	6.8	5.3
367408	Solid state semiconductors <sup>1</sup> .....	..do.....	206.3	86.9	15.9	13.7
367410	Monolithic (solid state) integrated circuits.....	(X)	(X)	1.8	(NA)	(NA)
281995	Silicon, hyper pure.....	1,000 kilograms...	3.4	0.5	2.8	0.4
333977	Germanium.....	1,000 pounds.....	(D)	(D)	1.1	1.0
260091	Paper and paperboard containers.....	(X)	(X)	18.0	(X)	7.1
329905	Mica.....	1,000 pounds.....	605.4	2.8	687.5	3.2
335606	Nickel and nickel-base alloy mill shapes and forms.....	Million pounds....	3.7	8.0	1.2	3.6
335602	Tantalum mill products.....	1,000 pounds.....	124.6	7.3	159.4	8.2
335603	Molybdenum, rolled, drawn, or extruded.....	..do.....	13.8	0.3	14.4	0.3
335733	Tungsten wire.....	Million meters....	2.1	0.5	1.1	0.3
339913	Ferrites (powder and paste).....	(X)	(X)	7.4	(X)	9.4
	Glass and glass products:					
322921	Tube blanks.....	Millions.....	0.9	0.6	0.5	0.3
320311	Other than tube blanks.....	(X)	(X)	3.5	(X)	3.3
367951	Fabricated electron tube parts except blanks.....	(X)	(X)	(D)	(X)	1.7
282130	Thermoplastic resins including modified resins.....	Million lbs. (Dry Basis).....	(NA)	3.6	5.0	2.8
282140	Thermosetting resins.....	..do.....	17.6	15.8	10.0	6.7
970099	All other materials and components, parts, containers, and supplies consumed.....	(X)	(X)	1,431.0	(X)	434.7
976000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> .....	(X)	(X)	233.3	(X)	135.7

(D) Included with material code 970099 "All other materials, etc." to avoid disclosing operation of individual companies.

(NA) Not available. n.e.c. Not elsewhere classified. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>No data are available for the quantities of castings, fractional horsepower electric motors, electron tubes, or solid state semiconductors produced and consumed in the same establishment.<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3679, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payroll, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products**--In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture**--This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

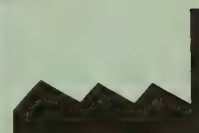
**Expenditures for Plant and Equipment**--For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories**--Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# 1967 CENSUS OF MANUFACTURES



MC67(P)-36E-1

## INDUSTRY SERIES

**preliminary  
report**

### Storage batteries

SIC Code 3691

The Storage Batteries Industry includes establishments primarily engaged in manufacturing storage batteries.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Storage Batteries Industry amounted to \$579.5 million, an increase of 12 percent compared with 1963. Value added by manufacture at \$260.6 million in 1967 was 7 percent more

than value added in 1963. Average employment in the industry showed an increase of 10 percent from 1963 to a total of 19,3 thousand employees in 1967.

Of the \$579.5 million total value of shipments and other receipts of establishments classified as storage batteries, \$13.1 million were products primary to other industries; and \$10.1 million were receipts for miscellaneous activities. The industry shipments of primary products represented 98 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was also 98 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture  (million dollars)	Cost of materials  (million dollars)	Value of shipments  (million dollars)	Capital expenditures, new  (million dollars)	End-of-year inventories  (million dollars)	Specialization ratio  (percent)	Coverage ratio  (percent)
	Total  (number)	With 20 employees or more (number)	Number  (1,000)	Payroll  (million dollars)	Number  (1,000)	Man-hours  (millions)	Wages  (million dollars)							
INDUSTRY 3691.--STORAGE BATTERIES														
1967 Census....	233	120	19.3	133.3	15.8	30.6	97.7	260.6	314.3	579.5	16.2	92.1	98	98
1966 ASM <sup>1</sup> .....	(NA)	(NA)	19.4	131.5	14.7	30.7	94.7	284.3	338.6	615.7	*7.7	93.7	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	19.3	127.7	14.8	30.6	91.8	296.5	331.8	615.2	21.1	91.5	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	17.0	110.0	13.3	27.7	80.5	245.7	286.6	527.0	12.9	79.4	(NA)	(NA)
1963 Census....	252	120	17.5	108.7	13.9	28.4	80.2	244.2	275.6	516.5	12.0	75.1	98	99
1962 ASM <sup>1</sup> .....	(NA)	(NA)	16.2	99.4	12.5	29.2	74.8	210.9	245.5	452.1	9.6	65.5	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	15.4	89.5	11.7	27.1	67.3	178.5	245.8	423.4	8.4	59.1	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	15.5	87.9	12.1	26.5	63.7	167.9	244.5	415.8	9.2	55.4	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	16.1	88.3	12.6	27.7	66.1	180.8	244.2	417.4	6.8	63.0	(NA)	(NA)
1958 Census <sup>2</sup> ...	276	106	14.9	77.0	11.8	23.2	55.5	150.1	211.8	369.0	7.3	52.1	99	100

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 2 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**BUREAU OF THE CENSUS George Hay Brown, Director**

The total value of storage batteries shipped by all producers in 1967 was \$568.0 million of which \$556.3 million, or 98 percent, were shipped by plants classified in industry 3691, Storage Batteries, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 99 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
	INDUSTRY 3691.--STORAGE BATTERIES												
United States, total.....	233	120	19.3	133.3	15.8	30.6	97.7	260.6	314.3	579.5	16.2	17.5	244.2
New England.....	13	9	0.8	6.2	0.5	0.9	2.8	7.6	9.2	17.1	0.3	1.1	13.9
Middle Atlantic.....	29	16	4.9	35.8	3.5	7.2	24.4	61.1	64.7	126.8	4.1	5.5	70.0
East North Central....	40	25	4.6	34.6	3.8	7.7	27.6	75.0	84.1	159.3	2.8	4.3	65.9
Illinois.....	16	10	1.4	9.2	1.1	2.1	6.7	24.3	28.0	52.9	0.8	1.0	17.2
West North Central....	17	12	2.4	15.2	2.0	4.0	12.1	28.7	36.7	67.1	1.0	2.0	27.4
South Atlantic.....	36	18	2.3	13.7	1.8	3.6	9.3	26.6	34.6	60.9	3.4	1.4	17.6
Florida.....	13	5	0.8	4.5	0.5	1.1	2.6	7.3	8.5	15.6	0.5	(D)	(D)
East South Central....	14	8	0.6	3.7	0.5	1.0	2.9	7.6	13.4	21.5	(D)	0.5	8.0
West South Central....	26	8	1.1	7.2	0.9	1.8	5.4	15.9	21.8	38.5	0.7	0.9	12.7
Mountain.....	8	4	0.3	1.8	0.3	0.6	1.4	3.2	4.3	7.6	(D)	(D)	(D)
Pacific.....	50	20	2.1	15.1	1.8	3.6	11.6	34.8	45.7	80.6	(D)	(D)	(D)
California.....	37	16	1.9	13.5	1.6	3.2	10.4	31.4	40.4	71.8	1.7	1.4	22.8

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3691- --	STORAGE BATTERIES, TOTAL.....		(X)	568.0	(X)	504.5
36911 --	Storage batteries, SLI type.....		(X)	396.8	(X)	360.9
	Motor vehicle batteries, including tractor, aircraft, and marine starting, lighting, and ignition types, complete units:					
	Automobile, truck, farm tractor, and bus:					
36911 13	Automotive type (all types primarily designed to fit passenger cars, regardless of application). For original equipment (6 volt and 12 volt).....	Million units..	10.5	94.6	9.2	77.3
	For replacement:					
	Wet:					
36911 21	6 volt.....	..do.....	3.6	31.4	9.9	72.5
36911 23	12 volt.....	..do.....	10.8	98.8	8.5	74.1
	Dry charge:					
36911 27	6 volt.....	..do.....	3.1	24.6	4.3	33.7
36911 28	12 volt.....	..do.....	11.6	106.4	9.5	80.0
	Heavy-duty transport, motor coach bus, and diesel starting batteries (excluding marine and railway diesel starting batteries):					
	For original equipment:					
36911 32	6 volt.....	1,000 units...	0.2	1.9	0.1	1.4
36911 35	12 volt.....	..do.....	0.3	3.5	0.2	3.7
	For replacement:					
36911 42	6 volt.....	..do.....	0.6	8.7	0.5	4.4
36911 45	12 volt.....	..do.....	1.0	17.2	0.3	4.4
36911 51	Aircraft.....	..do.....	6.1	4.3	0.1	3.2
36911 71	Marine.....	..do.....	0.2	2.3	0.1	1.5
36911 98	Other starting, lighting, and ignition type batteries (including motorcycle).....		(NA)	2.2	(X)	4.7
36911 00	Storage batteries, SLI type, n.s.k.....		(X)	0.7	-	-
36912 --	Storage batteries, other than SLI type, including parts for storage batteries, all types.....		(X)	156.7	(X)	139.1
	Motive power type:					
36912 11	Industrial truck type.....	1,000 cells...	0.7	42.2	(NA)	27.4
36912 19	Other motive power type storage batteries, including mining and industrial locomotive, and railway.....	..do.....	1.1	19.9	(NA)	3.8
36912 51	Communication storage batteries (include radio station, telephone and telegraph, and railroad signaling).....		(X)	23.5	(X)	18.1
36912 61	Railway diesel starting batteries.....	units.....	(NA)	6.0	27	6.0
36912 91	Parts and supplies for storage batteries.....		(X)	10.3	(X)	9.5
	Nickel-cadmium:					
36912 72	Sealed batteries.....	1,000 batteries	3.6	13.6	2.7	8.9
36912 75	Vented batteries.....	..do.....				
36912 81	Lead acid .....	..do.....				
36912 98	Other storage batteries (including farm and emergency lighting, and railway air-conditioning and car lighting).....	units.....	(NA)	41.5	(X)	65.3
36912 00	Storage batteries other than SLI type, n.s.k.....		(X)	0.4	-	-
36910 00	Storage batteries, n.s.k. (Represents establishments with 10 employees or more in 1967. See Note.).....		(X)	8.8	(X)	4.5
36910 02	Storage batteries, n.s.k. (Represents establishments with fewer than 10 employees in 1967. See Note.).....		(X)	5.7		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

-Represents zero. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

## 1967 CENSUS OF MANUFACTURES

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3691.--STORAGE BATTERIES					
	Materials, parts, containers, and supplies, total.....		(X)	294.3	(X)	264.2
	Lead:					
333233	Refined unalloyed lead.....	1,000 Short tons.	162.6	45.2	119.8	26.1
333234	Antimonial lead.....	..do.....	220.5	63.3	223.1	57.1
281634	Litharge.....	..do.....	101.4	30.0	87.7	21.0
335607	Zinc and zinc-base alloy mill shapes and forms.....	..do.....	(D)	(D)	(NA)	(NA)
362406	Carbon and graphite electrodes and other carbon and graphite products for electrical use.....		(D)	(D)	(NA)	(NA)
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	<sup>1</sup> 144.2	(X)	129.3
976000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> .....		(X)	11.6	(X)	30.8

(D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or from related figures. (NA) Not available. n.s.k. Not specified by kind.  
(X) Not applicable.

<sup>1</sup>Includes cost for materials for which the symbol "D" appears.

<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3691, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

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**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

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### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-36E-2

## INDUSTRY SERIES

**preliminary  
report**

### Primary batteries, dry and wet

SIC Code 3692

The Primary Batteries, Dry and Wet, Industry includes establishments primarily engaged in manufacturing primary batteries, dry or wet.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Primary Batteries, Dry and Wet, Industry amounted to \$307.6 million, an increase of 58 percent compared with 1963. Value added by manufacture at \$188.7 million in 1967 was 66

percent more than value added in 1963. Average employment in the industry showed an increase of 29 percent from 1963 to a total of 11.0 thousand employees in 1967.

Of the \$307.6 million total value of shipments and other receipts of establishments classified as primary batteries, dry and wet, \$13.9 million were products primary to other industries; and \$15.6 million were receipts for miscellaneous activities. The industry shipments of primary products represented 95 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 96 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)							
INDUSTRY 3692.--PRIMARY BATTERIES, DRY AND WET														
1967 Census....	50	36	11.0	61.0	8.9	17.6	43.2	188.7	122.0	307.6	20.2	45.4	95	97
1966 ASM <sup>1</sup> .....	(NA)	(NA)	10.4	55.5	8.3	16.5	39.8	167.4	114.8	277.0	5.9	42.0	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	8.9	46.7	6.9	14.2	32.6	139.8	97.9	233.1	2.6	34.0	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	8.3	41.3	6.5	13.1	28.8	123.0	84.3	209.0	3.2	27.5	(NA)	(NA)
1963 Census....	46	29	8.5	40.6	6.8	13.6	29.0	113.8	80.3	195.3	4.1	30.0	96	91
1962 ASM <sup>1</sup> .....	(NA)	(NA)	8.3	39.0	6.3	13.0	25.2	109.2	86.4	194.3	3.1	28.1	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	8.0	36.8	6.0	12.2	24.1	96.9	75.4	170.4	2.4	24.7	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	8.4	36.7	6.6	12.7	24.6	94.0	69.2	163.8	3.4	23.7	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	8.9	37.3	7.2	14.3	27.1	96.7	67.1	162.2	*1.9	23.3	(NA)	(NA)
1958 Census <sup>2</sup> ...	42	29	8.1	34.0	6.5	13.2	24.5	75.4	59.5	138.2	2.3	22.1	99	98

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

**BUREAU OF THE CENSUS** George Hay Brown, Director

The total value of primary batteries, dry and wet, shipped by all producers in 1967 was \$285.6 million of which \$278.1 million, or 97 percent, were shipped by plants classified in industry 3692, Primary Batteries, Dry and Wet, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 91 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967										1963		
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total	With 20 employees or more (number)	Number	Payroll (million dollars)	Number	Man-hours	Wages						
	(number)		(1,000)		(1,000)	(millions)	(million dollars)						
	INDUSTRY 3692.--PRIMARY BATTERIES, DRY AND WET												
United States, total... ..	50	36	11.0	61.0	8.9	17.6	43.2	188.7	122.0	307.6	20.2	8.5	113.8
North Central.....	15	13	5.2	27.8	4.4	8.6	20.7	86.6	51.5	135.2	(D)	4.4	49.9
Middle Atlantic.....	10	8	1.5	9.0	1.2	2.4	6.4	24.6	15.2	40.1	1.2	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3692- --	PRIMARY BATTERIES, DRY AND WET, TOTAL.....		(X)	285.6	(X)	191.6
	Dry cells (Leclanche types), except military:					
	General purpose (6 inch or equivalent) 1.5 volts:					
36920 12	Single unit.....	Million batteries.....	16.7	9.0	5.1	2.7
36920 16	Multiple unit.....	..do.....			1.8	3.0
36920 21	D size (standard and industrial) floodlight cells (single cells only).....	Million cells..	394.6	42.0	399.7	34.9
36920 82	Dry cell, military type, including general purpose 1.5 volts, standard flashlight, and portable radio types.....	1,000 batteries	71.2	40.5	37.4	20.5
36920 92	Wet cell primary batteries.....	Million batteries.....	1.1	16.2	0.8	14.2
36920 97	Other batteries, including flashlight cells other than "D" size, lantern batteries, radio A-B and C cells, and dry cells (except Leclanche type and military). <sup>1</sup> .....	..do.....	(NA)	161.5	(NA)	92.1
36920 95	Parts and supplies for primary batteries.....		(X)	13.1	(X)	22.5
36920 00	Primary batteries, n.s.k. (represents establishments with 10 employees or more in 1967. See Note).....		(X)	3.1	(X)	1.6
36920 02	Primary batteries, n.s.k. (represents establishments with fewer than 10 employees in 1967. See Note).....		(X)	0.3		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind. (X) Not applicable.



TABLE 4. **Materials Consumed, by Kind: 1967 and 1963**

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3692.--PRIMARY BATTERIES, DRY AND WET					
	Materials, parts, containers, and supplies, total.....		(X)	109.9	(X)	69.9
335607	Zinc and zinc-base alloy mill shapes and forms.....	1,000 short tons.	19.1	9.0	16.2	6.6
362406	Carbon and graphite electrodes and other carbon and graphite products for electrical use.....		(X)	5.0	(X)	2.5
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	93.9	(X)	60.1
976000	Materials, parts, containers, and supplies, n.s.k. <sup>1</sup> .....		(X)	2.0	(X)	0.8

n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3692, these small establishments accounted for less than 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

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**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**U.S. DEPARTMENT OF COMMERCE**  
**BUREAU OF THE CENSUS**  
**WASHINGTON, D.C. 20233**

**POSTAGE AND FEES PAID**  
**U.S. DEPARTMENT OF COMMERCE**

**OFFICIAL BUSINESS**

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

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"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# 1967 CENSUS OF MANUFACTURES

MC67(P)-36E-3



## INDUSTRY SERIES

**preliminary  
report**

### X-ray apparatus and tubes

SIC Code 3693

The X-ray apparatus and tubes industry includes establishments primarily engaged in manufacturing radiographic X-ray, fluoroscopic X-ray, and therapeutic X-ray apparatus and tubes for medical, industrial, research, and control applications. This industry also includes establishments primarily engaged in manufacturing electromedical and electrotherapeutic apparatus except electrotherapeutic lamp units for ultraviolet and infra-red radiation (industry 3641). Establishments primarily engaged in manufacturing radio receiving type tubes are classified in industry 3671; television receiving cathode ray tubes in industry 3672; and transmitting tubes in industry 3673.

The classification of establishments for which data are tabulated in this report is based upon

the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the X-ray apparatus and tubes industry amounted to \$233.2 million, an increase of 62 percent compared with 1963. Value added by manufacture at \$135.7 million in 1967 was 57 percent more than value added in 1963. Average employment in the industry showed an increase of 27 percent from 1963 to a total of 7.9 thousand employees in 1967.

Of the \$233.2 million total value of shipments and other receipts of establishments classified as X-ray apparatus and tubes, \$12.1 million

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (per-cent)	Coverage ratio (per-cent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3693--X-RAY APPARATUS AND TUBES														
1967 Census....	82	41	7.9	63.2	4.3	8.7	26.3	135.7	104.0	233.2	11.2	55.9	93	86
1966 ASM <sup>1</sup> .....	(NA)	(NA)	8.1	61.7	4.6	9.5	28.9	133.4	100.1	222.4	3.5	51.9	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	6.2	47.6	3.5	7.0	21.3	100.2	72.8	164.2	2.1	37.4	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	5.8	42.7	3.2	6.6	19.6	92.1	57.9	149.2	*2.3	31.1	(NA)	(NA)
1963 Census....	58	30	6.2	43.8	3.4	6.9	20.1	86.5	56.9	143.7	2.1	30.0	83	80
1962 ASM <sup>1</sup> .....	(NA)	(NA)	6.2	41.1	3.8	7.9	18.5	76.2	53.2	127.1	1.2	32.6	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	6.4	37.7	3.6	7.4	16.8	67.2	50.0	116.3	1.1	29.1	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	6.1	35.4	3.4	7.2	16.2	67.4	47.2	110.7	0.8	28.3	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	5.8	32.6	3.2	6.8	15.2	60.1	42.4	101.9	1.1	25.0	(NA)	(NA)
1958 Census <sup>2</sup> ...	126	33	5.3	30.7	3.0	5.9	14.3	58.4	35.7	95.1	1.4	21.9	84	82

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available. Revised.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents



**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary  
 Rocco C. Siciliano, Under Secretary  
 William H. Chartener, Assistant Secretary for Economic Affairs  
**BUREAU OF THE CENSUS** A. Ross Eckler, Director



were products primary to other industries; and \$66.5 million were receipts for miscellaneous activities. The industry shipments of primary products represented 93 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 83 percent in 1963.

The total value of X-ray apparatus and tubes shipped by all producers in 1967 was \$180.4 million of which \$154.6 million, or 86 percent, were shipped by plants classified in industry

3693, X-ray apparatus and tubes, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 80 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1 and 2 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### **COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA**

For industry 3693, the Census Bureau collects current statistics on selected products. These data appear in the following Current Industrial Reports series:

MA-36N, Selected Electronic and Associated Products

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3693, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1 and 2 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1 and 2 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.

## 1967 CENSUS OF MANUFACTURES

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY--3693 X-RAY APPARATUS AND TUBES													
United States, total.....	82	41	7.9	63.3	4.3	8.7	26.3	135.7	104.0	233.2	11.2	6.2	86.5
Middle Atlantic.....	33	17	1.5	11.5	0.9	1.7	4.6	24.0	15.2	38.1	(D)	(D)	(D)
North Central.....	20	12	4.1	32.0	2.4	5.0	16.6	79.5	46.0	121.2	8.7	3.6	52.7

Note: Only those regions, divisions, or States are listed that could be shown without disclosing the operations of individual companies, either directly or by subtraction from higher-level totals. Individual figures that are withheld are indicated with a (D). All such figures are included in higher level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3693 --	X-RAY APPARATUS AND TUBES, TOTAL.....	.....	(X)	180.4	(X)	108.6
36930 00	X-ray equipment, including X-ray tubes, and electrotherapeutic apparatus:	.....	(X)	180.4	(X)	108.6
	As reported in the census of manufactures.....	.....	(X)	172.6	(X)	100.6
	As reported on Census annual Form MA-36N.....	.....	(X)		(X)	
36930 82	Medical diagnostic and therapeutic electronic equipment, except X-ray:	.....	(X)	0.9	(X)	3.7
	Diathermy equipment.....	.....	(X)	13.1	(X)	9.8
	Electrocardiographs.....	1,000 units...	(X)	42.3	(X)	18.2
36930 92	Electroencephalographs.....	.....	(X)		(X)	
36930 94	Other (electronic).....	.....	(X)		(X)	
36930 96	X-ray equipment and accessories (excluding X-ray spectrometers and diffraction equipment):	.....	(X)	68.2	(X)	42.5
36930 19	Medical and dental X-ray and gamma-ray equipment.....	.....	(X)	24.8	(X)	12.0
36930 34	Industrial and scientific X-ray equipment.....	.....	(X)	13.3	(X)	6.8
36930 71	X-ray equipment accessories.....	.....	(X)	12.1	(X)	10.0
36930 49	X-ray tubes and valves, sold separately.....	1,000 units...	(NA)		30.1	

(NA) Not available.      <sup>r</sup>Revised.      (X) Not applicable.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(Not applicable to this report)



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

Textile mill products • Apparel and leather • Chemicals, rubber, and plastics • Machinery and equipment • Primary metals • Intermediate metal products • Processed foods • Lumber, furniture, and paper products • Stone, clay, and glass products.

A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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**OFFICIAL BUSINESS**



# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

**preliminary  
report**

### Engine electrical equipment

SIC Code 3694

The Electrical Equipment for Internal Combustion Engines Industry includes establishments primarily engaged in manufacturing electrical equipment for internal combustion engines. Important products of this industry include starting motors, alternators, and generators for automobiles and aircraft; and ignition apparatus for internal combustion engines including spark plugs, magnetos, coils, and distributors.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classi-

fied in the Engine Electrical Equipment Industry amounted to \$1,355.7 million, an increase of 51 percent compared with 1963. Value added by manufacture at \$757.8 million in 1967 was 53 percent more than value added in 1963. Average employment in the industry showed an increase of 35 percent from 1963 to a total of 54.9 thousand employees in 1967.

Of the \$1,355.7 million total value of shipments and other receipts of establishments classified as engine electrical equipment, \$188.4 million were products primary to other industries; and \$100.1 million were receipts for miscellaneous activities. The industry shipments of primary products represented 85 percent of the total manufactured product shipments, primary and secondary. This

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
	INDUSTRY 3694.--ENGINE ELECTRICAL EQUIPMENT													
1967 Census....	265	133	54.9	385.0	43.8	85.7	285.3	757.8	597.2	1,355.7	46.1	176.2	85	87
1966 ASM <sup>1</sup> .....	(NA)	(NA)	52.3	362.2	42.0	87.7	272.2	735.2	620.8	1,342.5	38.4	167.5	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	42.8	287.6	35.1	73.1	216.0	605.1	481.0	1,073.7	20.4	129.8	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	38.8	251.8	31.4	63.6	184.8	526.9	400.7	925.5	19.6	108.4	(NA)	(NA)
1963 Census....	182	98	40.6	250.2	32.7	66.9	184.4	496.7	398.0	900.7	15.5	99.8	93	81
1962 ASM <sup>1</sup> .....	(NA)	(NA)	43.6	272.6	35.3	71.8	193.0	534.5	382.4	905.0	22.0	113.8	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	40.5	236.9	31.9	61.3	157.9	449.2	311.2	766.4	18.7	98.8	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	42.9	239.3	33.9	65.7	164.8	470.7	331.0	799.4	13.9	103.8	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	41.3	236.0	32.6	66.5	165.1	473.5	323.0	782.5	12.1	111.5	(NA)	(NA)
1958 Census <sup>2</sup> ...	157	89	38.1	196.0	29.5	56.4	135.8	353.5	248.1	606.5	8.9	83.4	87	84

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**

percent, called the specialization ratio for the industry, was 93 percent in 1963.

The total value of engine electrical equipment shipped by all producers in 1967 was \$1,219.9 million of which \$1,067.2 million, or 87 percent, were shipped by plants classified in industry 3694, Engine Electrical Equipment, while the remainder was shipped by plants classified in

other industries. This percent, called the coverage ratio, was 81 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture  (million dollars)	Cost of materials  (million dollars)	Value of shipments  (million dollars)	Capital expenditures, new  (million dollars)	All employees  (1,000)	Value added by manufacture  (million dollars)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
INDUSTRY 3694.--ENGINE ELECTRICAL EQUIPMENT													
United States, total.....	265	133	54.9	385.0	43.8	85.7	285.3	757.8	597.2	1,355.7	46.1	40.6	496.7
New England.....	23	14	2.8	16.5	2.0	4.0	10.5	32.2	28.5	60.6	0.8	2.2	18.6
Middle Atlantic.....	50	29	5.5	33.2	4.0	8.2	20.2	61.1	39.0	99.9	(D)	4.5	44.5
New York.....	18	8	2.0	12.7	1.5	3.0	7.1	22.7	15.0	37.6	0.8	2.5	27.8
New Jersey.....	14	9	2.0	12.8	1.4	2.9	7.5	22.8	13.1	35.3	(D)	0.9	6.1
Pennsylvania.....	19	12	1.4	7.8	1.2	2.3	5.5	15.6	10.8	26.9	0.5	1.2	10.7
North Central.....	97	59	43.4	319.3	35.0	68.1	243.1	631.5	504.1	1,136.4	42.1	31.7	416.3
Illinois.....	21	11	2.7	17.0	1.9	3.7	10.2	35.2	39.0	72.6	1.1	2.8	31.3
Wisconsin.....	6	4	1.5	8.7	1.1	2.2	5.6	11.6	10.8	23.2	0.7	1.2	9.8
Missouri.....	8	1	0.1	0.5	0.1	0.2	0.4	1.1	0.7	1.8	(Z)	(D)	(D)
South.....	44	15	2.1	9.9	1.8	3.6	7.5	20.6	18.3	39.0	(D)	1.4	9.3
South Atlantic.....	16	6	0.5	2.7	0.5	0.9	2.2	6.2	5.1	11.3	(D)	0.2	1.1
Texas.....	10	3	0.3	1.3	0.2	0.4	1.0	3.2	2.5	5.6	(D)	(D)	(D)
West.....	51	16	1.1	6.1	0.9	1.7	4.1	12.4	7.4	19.8	0.3	0.8	7.9

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	1967						1963	
			Total shipments, including interplant transfers		Domestic— for replacement including shipments to U.S. motor vehicle manufacturers for resale <sup>1</sup>		To U.S. motor vehicle manufacturers or their suppliers for use in original equipment <sup>1</sup>	For export including transfers to other divisions for export	Total shipments, including interplant transfers	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)	Value (million dollars)	Value (million dollars)	Quantity	Value (million dollars)
3694--	ENGINE ELECTRICAL EQUIPMENT, TOTAL..		(X)	1,219.9	(X)	(X)	(X)	(X)	(X)	873.9
36941--	Ignition harness and cable sets.....		(X)	76.5	(X)	(X)	(X)	(X)	(X)	58.9
	Ignition harness sets:									
36941 11	Automotive type.....	Million units.	24.2	32.2	(X)	(X)	(X)	(X)	20.4	28.7
36941 15	Aircraft type.....	..do.....	(NA)	2.3	(X)	(X)	(X)	(X)	1.4	6.7
36941 19	Other, including tractor, stationary engine, etc.....	..do.....	(NA)	2.6	(X)	(X)	(X)	(X)	(NA)	2.3
36941 51	Cable sets (automotive and aircraft types).....	..do.....	(NA)	33.9	(X)	(X)	(X)	(X)	15.4	20.7
36941 00	Ignition harness sets, n.s.k.....		(X)	5.5	(X)	(X)	(X)	(X)	(X)	0.4
36942--	Battery charging generators.....		(X)	288.3	(X)	(X)	(X)	(X)	(X)	199.3
	Battery charging generators, including alternators for internal combustion engines:									
36942 11	Passenger car and light truck type: 6-volt.....	Million units.	(NA)	2.1	(D)	(D)	(D)	(D)	0.5	3.6
36942 15	12-volt.....	..do.....	20.0	156.3	0.3	9.2	147.1		(NA)	120.0
36942 21	Heavy-duty truck and bus type 12 volt and higher (new).....	..do.....	(NA)	51.1	(D)	(D)	(D)	(D)	0.3	17.5
36942 29	All other excluding farm lighting generators (including farm tractor type battery charging generators sold to engine manufacturers for incorporation into end products such as stationary engines, marine engines, construction machinery, etc.).....	..do.....			(X)	(X)	(X)	(X)	(NA)	17.0
36942 27	Rebuilt automotive type generators and alternators.....	..do.....			(NA)	27.0	(X)	(X)	(NA)	(NA)
	Regulators for battery charging generators:									
36942 37	Rebuilt automotive type regulators..	..do.....	(NA)	20.9	(X)	(X)	(X)	(X)	(NA)	(NA)
36942 41	Passenger car and light truck type (new).....	..do.....	15.1	41.4	2.9	9.6	31.8		13.9	34.9
36942 47	Heavy-duty truck and bus type (new).....	..do.....	1.4	9.4	(D)	(D)	(D)	(D)	0.7	5.7
36942 49	Other types.....	..do.....			(X)	(X)	(X)	(X)		
36942 00	Battery charging generators, n.s.k....		(X)	0.1	(X)	(X)	(X)	(X)	(X)	0.6
36943--	Cranking motors.....		(X)	221.2	(X)	(X)	(X)	(X)	(X)	134.7
36943 11	Passenger car and light truck type....	Million units.	9.6	197.7	(NA)	(NA)	(NA)	(NA)	8.8	108.0
36943 31	Heavy-duty truck and bus type.....	..do.....			(D)	(D)	(D)	(D)	0.8	24.8
36943 51	Farm tractor type.....	..do.....			(X)	(X)	(X)	(X)		
36943 71	Other cranking motors, including aircraft type.....	..do.....			(X)	(X)	(X)	(X)	0.2	1.9
36943 41	Rebuilt automotive type cranking motors.....	..do.....	2.6	23.5	(X)	(X)	(X)	(X)	(NA)	(NA)
36944--	Spark plugs.....		(X)	184.8	(X)	(X)	(X)	(X)	(X)	143.8
36944 11	Motor vehicles (passenger cars, trucks and buses).....	Million units.	656.2	184.8	520.7	155.9	(D)	(D)	528.6	134.7
36944 31	Other types.....	..do.....			(X)	(X)	(X)	(X)	4.4	8.9
36944 00	Spark plugs, n.s.k.....		-	-	(X)	(X)	(X)	(X)	(X)	0.3

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	1967						1963	
			Total shipments, including interplant transfers		Domestic— for replacement including shipments to U.S. motor vehicle manufacturers for resale¹		To U.S. motor vehicle manufacturers or their suppliers for use in original equipment¹	For export including transfers to other divisions for export	Total shipments, including interplant transfers	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)	Value (million dollars)	Value (million dollars)	Quantity	Value (million dollars)
3694- --	ENGINE ELECTRICAL EQUIPMENT-- Continued									
36945 --	Other complete electrical equipment for internal combustion engines.....		(X)	263.0	(X)	(X)	(X)	(X)	(X)	217.1
	Ignition coils:									
36945 11	Motor vehicles (trucks, buses, and passenger cars).....	Million units.	15.1	28.3	(NA)	5.7	22.1	0.6	18.4	32.7
36945 19	Other ignition coils.....	do.....	2.4	3.8	(X)	(X)	(X)	(X)	0.8	2.1
	Distributors:									
36945 31	Motor vehicles (passenger cars, trucks, and buses).....	do.....								
36945 39	Other types.....	do.....	11.8	69.6	(NA)	69.6			9.5	53.9
36945 53	Ignition magnetos (all types).....	1,000 units...	(NA)	12.2	(X)	(X)	(X)	(X)	174.8	17.4
36945 61	Other ignition equipment.....	do.....	(X)	15.9	(X)	(X)	(X)	(X)	(X)	5.5
	Switches specifically designed for use in vehicles and aircraft (all types: starting, lighting, etc.):									
36945 81	Automotive vehicle switches (trucks, buses, and passenger cars).....	Million units.	123.9	117.8	(X)	(X)	(X)	(X)	113.3	80.7
36945 85	Aircraft switches.....	do.....			(X)	(X)	(X)	(X)	(NA)	8.8
36945 89	Other vehicle switches.....	do.....			(X)	(X)	(X)	(X)	(NA)	11.9
36945 98	Other complete electrical equipment units for internal combustion engines and vehicles.....	do.....	(NA)	11.7	(X)	(X)	(X)	(X)	(NA)	3.9
36945 00	Other complete electrical equipment for internal combustion engines, n.s.k.....		(X)	3.7	(X)	(X)	(X)	(X)	(X)	0.3
36946 --	Components and parts for engine electrical equipment.....		(X)	150.6	(X)	(X)	(X)	(X)	(X)	114.7
36946 11	Armatures, field coils, and drive end housings.....		(X)	7.3	(X)	(X)	(X)	(X)		
36946 21	Armatures for battery charging generators.....	1,000 units...	(NA)	3.6	(X)	(X)	(X)	(X)	(X)	26.8
36946 31	Parts for ignition distributors: Distributor heads and rotors.....		(X)	6.9	(X)	(X)	(X)	(X)	(X)	10.1
	Breaker point sets:									
36946 53	Motor vehicles (passenger cars, trucks, and buses).....	Million units.								
36946 57	All other types.....	do.....	(NA)	38.1	(NA)	38.1			(X)	40.9
	Condensers:									
36946 73	Motor vehicles (passenger cars, trucks, and buses).....	do.....								
36946 75	All other types.....	do.....	50.1	13.8	(NA)	13.8			52.3	13.6
36946 98	Other component parts for engine electrical equipment, including field coils for battery charging generators.....		(X)	78.6	(X)	(X)	(X)	(X)	(X)	23.2
36946 00	Components and parts for engine electrical equipment, n.s.k.....		(X)	2.3	(X)	(X)	(X)	(X)	(X)	0.1
36940 00	Engine electrical equipment, n.s.k. (Represents principally establishments with 10 or more employees in 1967. See Note.).....		(X)	31.6	(X)	(X)	(X)	(X)	(X)	5.4
36940 02	Engine electrical equipment, n.s.k. (Represents principally establishments with fewer than 10 employees in 1967. See Note.).....		(X)	3.9	(X)	(X)	(X)	(X)		

Footnotes on next page.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

FOOTNOTES FOR TABLE 3--INDUSTRY 3694

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or from related figures. (NA) Not available. n.s.k. Not specified by kind.  
(X) Not applicable.

<sup>1</sup>Motor vehicle parts data were published in the 1963 Census of Manufactures in Table 6E, Production and Use of Selected Parts of the Type Used for Passenger Cars, Trucks, and Busses, of report MC63(2)-37A, Motor Vehicles and Equipment. There are significant differences in the manner in which the data were developed in the two Censuses including the following:

- a. In 1963 a total production figure was typically collected including, where appropriate, the quantities produced and consumed in the same establishment in producing a more finished product. In 1967 production figures were collected but are not published because they were incomplete.
- b. In 1963 separate quantity data were reported for the quantities of equipment "used in the assembly of new vehicles." These data were collected from automobile assembly plants and included the quantities of parts produced and consumed in the assembly of new vehicles. For 1967 a value rather than a quantity figure was collected and the data were reported by the plants producing the parts rather than by the assembly plants. No values are included for the quantities of parts produced and consumed in the same plant. The value of parts shipped as interplant transfers from parts plants to assembly plants owned by the same company are included in both 1963 and 1967.
- c. In 1963 the quantity of parts "for replacement, export, and other purposes" was derived by subtracting from the total number of units produced the quantities used in the assembly of new vehicles as reported by motor vehicle assembly plants. In 1967 the quantity and value shipped by parts producers for replacement was reported separately and, in addition, a value of export shipments was reported by parts producing plants.

<sup>2</sup>Data are limited to rebuilding on a factory basis. Rebuilding operations performed in service stations, garages, etc., are excluded from the census of manufactures. Also, these figures may be somewhat understated because of the exclusion of data for establishments with fewer than 10 employees. Such establishments were typically not included in the mail portion of the 1967 Census of Manufactures, but were included in the published data by the use of estimates from administrative records. These estimates are included in the value shown for product code 3694002. Although the use of such administrative records tends to create a small understatement for most specific products, the effect is more significant for those products typically produced in small establishments, such as rebuilding facilities.



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3694.--ENGINE ELECTRICAL EQUIPMENT					
	Materials, parts, containers, and supplies, total.....		(X)	545.7	(X)	356.4
	Mill shapes and forms, except castings:					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	130.0	27.3	118.3	24.7
331012	Sheet and strip.....	..do.....	145.6	26.2	116.6	17.6
331017	Wire and wire products.....	..do.....	(NA)	4.6	11.6	6.9
331013	Plates.....	..do.....	26.8	5.7	17.3	3.6
331019	All other carbon steel mill shapes and forms.....	..do.....				
331020	Alloy steel, except stainless.....	..do.....	3.0	0.7	1.7	0.5
331031	Stainless steel.....	..do.....	-	-	0.3	0.4
	Copper and copper base alloy:					
335728	Bare wire (for electrical conduction only).....	Million pounds...	42.0	27.0	39.2	19.6
335790	Insulated wire and cable.....	Million pounds (copper content).	43.1	30.7	30.5	16.1
335102	Rod, bar, and mechanical wire including extruded and/or drawn shapes.....	Million pounds...	17.9	11.5	22.4	8.3
335123	Plate, sheet, and strip, including military cups and discs...	..do.....			8.6	4.3
335127	Pipe and tube.....	..do.....			0.1	0.1
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	..do.....	0.8	0.7	1.2	1.1
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	..do.....	(NA)	0.2	0.6	0.5
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	..do.....	2.4	1.6	0.8	0.6
	Primary metals:					
331051	Pig iron.....	1,000 short tons.	(D)	(D)	(D)	(D)
333401	Aluminum and aluminum-base alloy refinery shapes.....	..do.....	25.5	10.4	(D)	(D)
	Castings(rough and semifinished): <sup>1</sup>					
332011	Iron (gray and malleable).....	..do.....	27.3	8.3	15.6	5.5
336100	Aluminum and aluminum-base alloy.....	Million pounds...	24.2	12.6	10.1	5.2
336200	Copper and copper-base alloy.....	..do.....	-	-	0.5	0.3
	Bearings:					
356218	Ball.....		(X)	16.7	(X)	8.6
356201	Roller.....					
970099	All other materials and components, parts, containers and sup- plies consumed.....		(X)	329.7	(X)	225.6
976000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> .....		(X)	31.8	(X)	7.1

-Represents zero. (D) Included with material code 970099 "all other materials etc." to avoid disclosing operation of individual companies.

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>No data are available for the quantities of castings produced and consumed in the same establishment.<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3694, these small establishments accounted for approximately 0.3 percent of payrolls and 0.3 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# CURRENT INDUSTRIAL REPORTS

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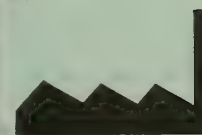
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# 1967 CENSUS OF MANUFACTURES



MC67(P)-36E-5

## INDUSTRY SERIES

**preliminary  
report**

### Electrical equipment, n.e.c. SIC Code 3699

The Electrical Machinery Equipment, and Supplies, Not Elsewhere Classified, Industry includes establishments primarily engaged in manufacturing electrical machinery, equipment, and supplies, not elsewhere classified.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Electrical Equipment, N.E.C., Industry amounted to \$296.8 million, an increase of 56 percent compared with 1963. Value added by manufacture at \$148.6 million in 1967 was 47

percent more than value added in 1963. Average employment in the industry showed an increase of 28 percent from 1963 to a total of 13.9 thousand employees in 1967.

Of the \$296.8 million total value of shipments and other receipts of establishments classified as electrical equipment, n.e.c., \$29.1 million were products primary to other industries; \$21.9 million were receipts for miscellaneous activities. The industry shipments of primary products represented 89 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 90 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3699.--ELECTRICAL EQUIPMENT, N.E.C.														
1967 Census....	540	130	13.9	71.6	11.3	22.4	46.5	148.6	149.2	296.8	12.6	46.3	89	47
1966 ASM <sup>1</sup> .....	(NA)	(NA)	16.6	84.7	13.4	25.8	53.3	168.2	158.2	319.3	*8.1	45.1	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	13.3	67.1	10.6	21.0	42.6	126.8	120.4	245.6	8.0	30.3	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	10.8	56.3	8.2	16.7	35.4	100.8	94.6	192.4	*3.9	23.4	(NA)	(NA)
1963 Census....	350	106	10.9	51.2	8.5	16.5	33.4	101.2	89.0	190.0	3.3	24.3	90	49
1962 ASM <sup>1</sup> .....	(NA)	(NA)	11.6	53.3	8.8	16.4	31.8	93.7	86.6	189.3	*2.3	24.3	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	12.0	52.5	9.2	18.0	32.9	93.8	86.2	179.5	*1.6	22.9	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	11.6	48.7	9.1	17.5	30.9	91.5	82.6	172.6	1.4	22.2	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	10.9	43.7	8.5	16.7	28.0	79.9	90.2	171.8	(S)	20.6	(NA)	(NA)
1958 Census <sup>2</sup> ...	259	99	10.3	39.3	8.2	15.8	26.3	73.6	89.8	165.4	1.4	22.4	91	54

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

(S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 4 and 5, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued December 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**

The total value of electrical equipment, n.e.c., shipped by all producers in 1967 was \$518.2 million of which \$245.8 million, or 47 percent, were shipped by plants classified in industry 3699, Electrical Equipment, N.E.C., while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 49 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3699, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-33L, Insulated Wire and Cable, and MA-34N, Heating and Cooking Equipment.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967										1963		
	Establishments		All employees		Production workers			Value added by manufacture  (million dollars)	Cost of materials  (million dollars)	Value of shipments  (million dollars)	Capital expenditures, new  (million dollars)	All employees  (1,000)	Value added by manufacture  (million dollars)
	Total  (number)	With 20 employees or more (number)	Number  (1,000)	Payroll  (million dollars)	Number  (1,000)	Man-hours  (millions)	Wages  (million dollars)						
INDUSTRY 3699.--ELECTRICAL EQUIPMENT, N.E.C.													
United States, total.....	540	130	13.9	71.6	11.3	22.4	46.5	148.6	149.2	296.8	12.6	10.9	101.2
New England.....	46	14	2.7	13.1	2.3	4.1	9.5	27.5	26.0	52.8	1.7	1.7	16.7
Middle Atlantic.....	162	38	3.1	15.3	2.6	5.0	10.7	33.1	40.5	74.5	1.2	3.2	28.5
New York.....	83	21	1.8	8.0	1.5	2.9	5.4	17.1	25.5	43.7	0.4	2.3	17.4
New Jersey.....	53	10	0.7	4.3	0.6	1.2	3.1	8.4	5.8	14.2	0.4	(D)	(D)
Pennsylvania.....	26	7	0.5	3.0	0.5	0.9	2.2	7.6	9.3	16.5	0.4	(D)	(D)
East North Central....	111	42	4.6	25.4	3.7	8.3	15.8	47.5	49.1	95.6	6.3	2.8	24.1
Ohio.....	19	8	0.7	4.7	0.6	1.1	3.0	12.2	9.0	21.2	0.9	0.7	8.8
Indiana.....	20	10	1.1	5.1	0.9	3.2	3.7	10.1	10.2	20.2	(D)	0.7	5.6
Illinois.....	41	11	1.4	10.1	1.0	1.9	5.1	15.4	19.7	34.4	(D)	(D)	(D)
Michigan.....	21	11	1.2	4.8	1.1	1.8	3.4	8.2	8.9	16.9	0.2	(D)	(D)
Wisconsin.....	10	2	0.1	0.7	0.1	0.2	0.5	1.5	1.3	2.8	(Z)	0.2	1.0
West North Central....	29	8	0.9	4.2	0.7	1.4	2.7	9.3	8.0	18.1	0.2	0.7	8.6
Minnesota.....	12	4	0.2	1.0	0.2	0.3	0.6	1.6	1.8	3.3	0.1	(D)	(D)
South.....	65	14	1.2	5.7	1.0	1.8	3.6	15.2	11.4	26.3	1.8	2.0	16.9
South Atlantic.....	31	8	0.5	2.1	0.4	0.7	1.4	6.1	3.3	9.4	(D)	(D)	(D)
West.....	127	14	1.5	7.9	1.1	1.9	4.2	16.0	14.3	29.6	1.4	0.6	6.3
California.....	102	14	1.4	7.7	1.0	1.8	4.1	15.3	13.6	28.3	(D)	0.6	6.1

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.  
(Z) Less than \$50 thousand.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (million units)	Value (million dollars)	Quantity (million units)	Value (million dollars)
3699- --	ELECTRICAL EQUIPMENT, N.E.C., TOTAL.....	(X)	518.2	(X)	335.5
36992 --	Lampbulb components (except glass blanks) and other electrical products, total.....	(X)	224.3	(X)	156.9
36992 11	Electrical lamp (bulb) bases.....	(X)	37.0	(X)	21.6
36992 21	Other electric lamp (bulb) components, including supports, electrodes, leadings, and filament, but excluding lamp bulb blanks.....	(X)	77.8	(X)	56.6
36992 51	Electric gongs, chimes and bells.....	(X)	19.3	(X)	9.0
36992 71	Christmas tree lighting outfits, including value of bulbs made or purchased and assembled in outfit.....	(NA)	29.5	13.1	16.2
36992 60	Electric comfort heating equipment (warm-air furnace and unit heaters), excluding air space heater. As reported in Census of Manufactures....	(X)	6.0	(X)	7.1
	As reported in Census Annual Form 34N.....	42.1	5.9		
36992 65	For other electric comfort heating, excluding household air space heaters.....	(X)	54.7	(X)	(X)
36992 98	Other electrical products, n.e.c.....	(X)	54.7	(X)	46.4
33576 --	Appliance wire and cord and flexible cord sets.....	(X)	262.9	(X)	167.7
36996 --		(X)	262.9	(X)	167.7
	As reported on Census Annual Form MA33L .....	140.8	259.8	(X)	(X)
	As reported in the Census of Manufacture.....	(X)	262.9	(X)	167.7
33576 --	Made in industry 3357 (drawing and insulating of nonferrous wire).....	(X)	168.8	(X)	101.7
36996 --	Made in industry 3699 (electrical machinery, equipment, n.e.c.) and other industries.....	(X)	94.1	(X)	66.0
36990 00	Electrical products, n.e.c, n.s.k. (Represents establishments with 10 employees or more in 1967. See Note.).....	(X)	17.4	(X)	10.9
36990 02	Electrical products, n.e.c, n.s.k. (Represents establishments less than 10 employees in 1967. See Note.).....	(X)	16.7		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. (X) Not applicable.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3699.--ELECTRICAL EQUIPMENT, N.E.C.					
	Materials, parts, containers, and supplies, total.....		(X)	136.5	(X)	83.3
	Mill shapes and forms (except castings):					
331001	Carbon steel.....	1,000 short tons.	7.4	2.6	2.8	0.9
331020	Alloy steel (except stainless).....	do.....	0.8	0.6	0.9	0.6
331031	Stainless steel.....	do.....	0.4	0.3	0.5	0.5
335208	Aluminum and aluminum-base alloy.....	million lbs.....	10.7	4.3	(D)	(D)
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction only).....	million lbs. copper content..	0.8	1.1	0.5	0.9
335790	Insulated wire and cable.....	million lbs. copper content..	27.0	21.4	14.1	13.3
335100	Brass mill shapes (rod, sheet, bar, etc.).....	1,000 short tons.	4.0	3.9	3.5	3.1
367010	Electron tubes, except X-ray <sup>2</sup> .....	Millions.....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
367408	Solid state semiconductors <sup>2</sup> .....	Millions.....	1.5	0.8	1.7	1.3
281995	Silicon, hyper pure.....	1,000 kilograms..	( <sup>1</sup> )	( <sup>1</sup> )	(NA)	(NA)
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	68.2	(X)	45.5
976000	Materials, parts, containers, and supplies, n.s.k. <sup>3</sup> .....		(X)	33.3	(X)	17.2

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals. (NA) Not available.  
n.e.c. Not elsewhere classified. n.s.k. Not specified by kind. (X) Not applicable.  
<sup>1</sup>Included with material code "970099." All other material and components, parts, containers, and supplies consumed in order to avoid disclosing the operations of individual companies.

<sup>2</sup>No data are available on the quantities of electron tubes or solid state semiconductors produced and consumed in the same establishment.

<sup>3</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3699, these small establishments accounted for approximately 6 percent of payrolls and 6 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

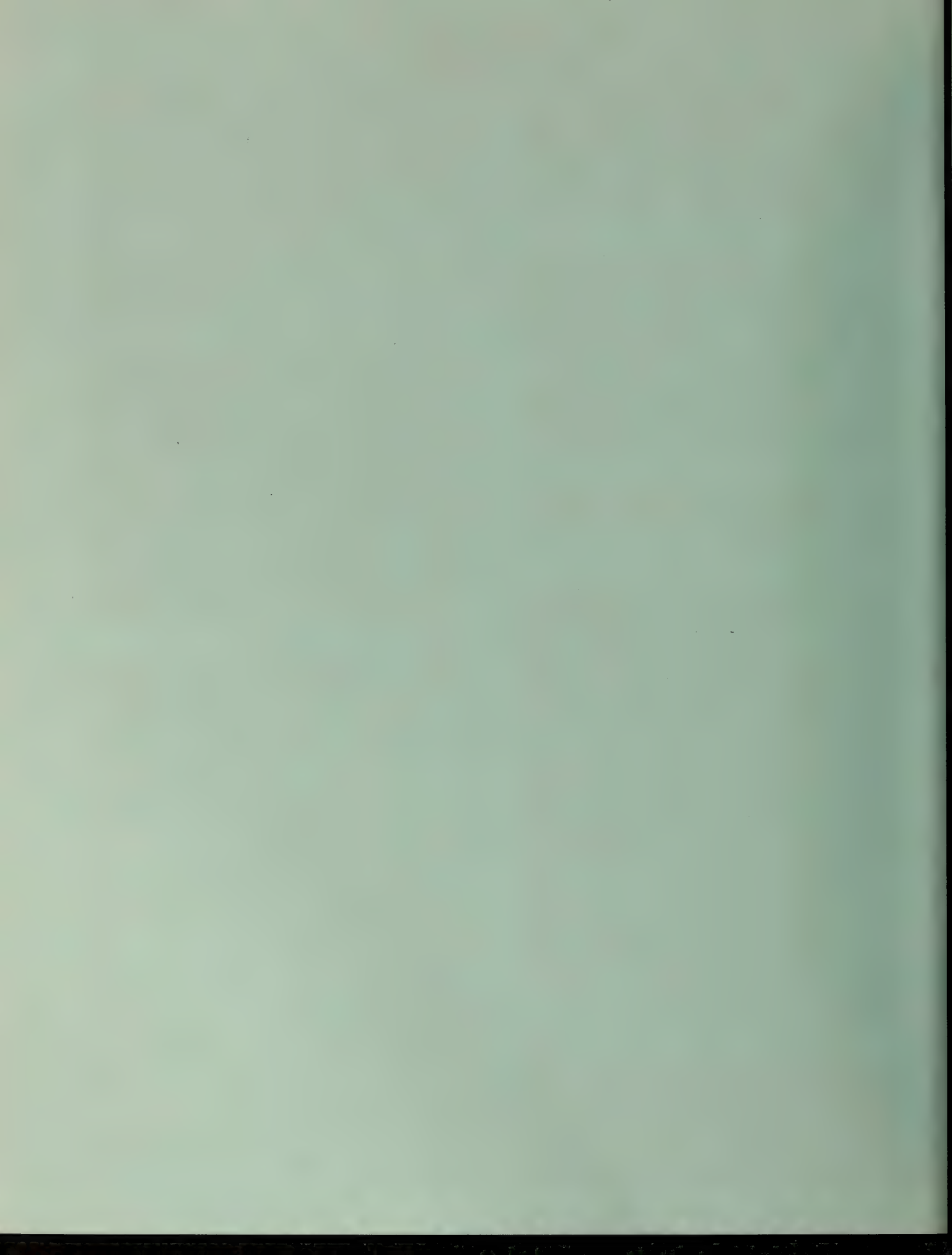
these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

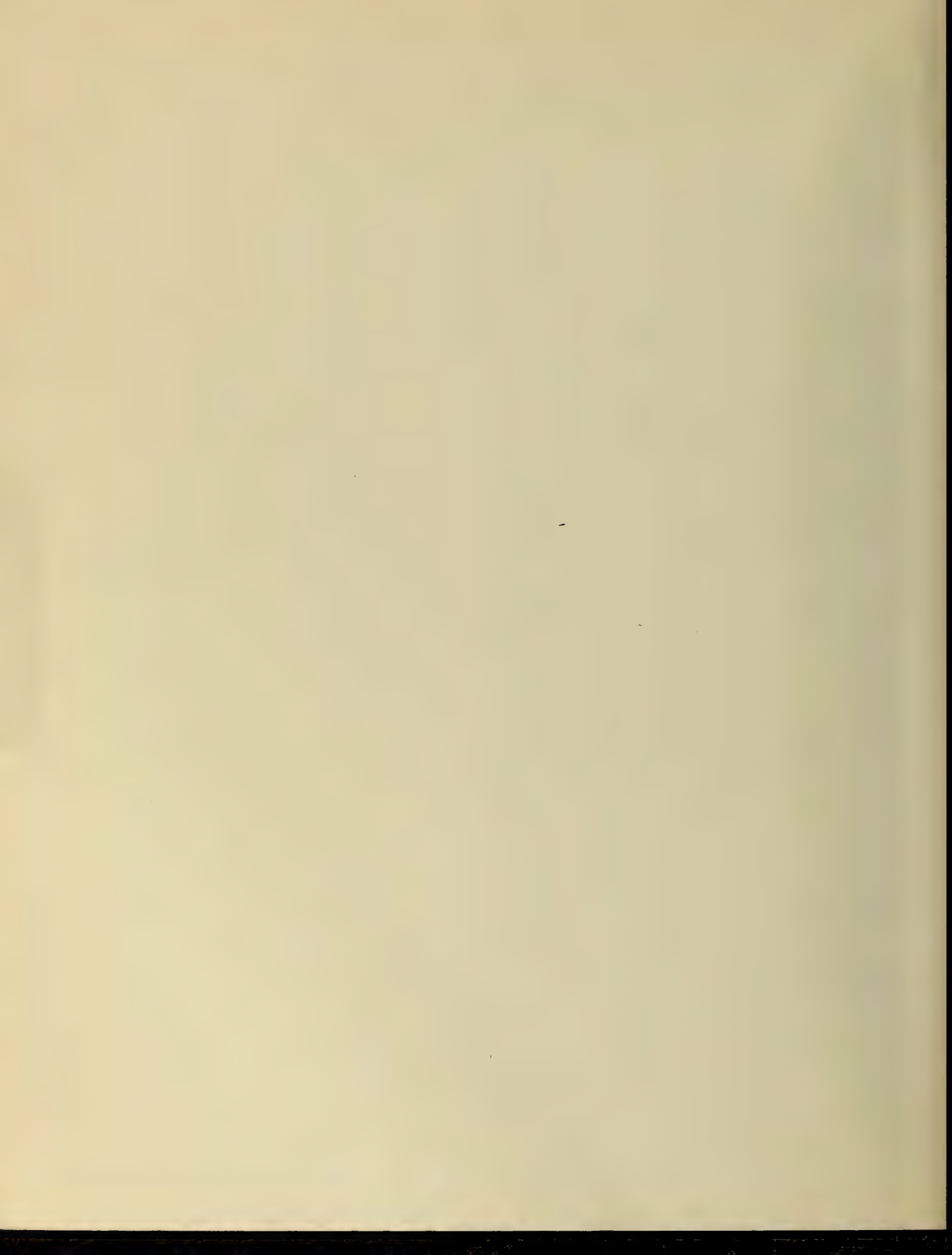
**U.S. DEPARTMENT OF COMMERCE**  
**Bureau of the Census**  
Washington, D.C. 20233

POSTAGE AND FEES PAID  
U.S. DEPARTMENT OF COMMERCE

OFFICIAL BUSINESS

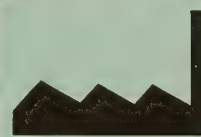








# 1967 CENSUS OF MANUFACTURES



MC67(P)-37A-3

INDUSTRY SERIES

## Truck and bus bodies

SIC Code 3713

**preliminary  
report**

The Truck and Bus Bodies Industries includes establishments primarily engaged in manufacturing truck and bus bodies, for sale separately or for assembly on purchased chassis. Establishments primarily engaged in manufacturing complete trucks and busses are classified in industry 3711, and stamped body parts for trucks and busses in industry 3461.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Truck and Bus Bodies Industry amounted to \$704.0 million, an increase of 48

percent compared with 1963. Value added by manufacture at \$332.8 million in 1967 was 45 percent more than value added in 1963. Average employment in the industry showed an increase of 24 percent from 1963 to a total of 30.4 thousand employees in 1967.

Of the \$704.0 million total value of shipments and other receipts of establishments classified as truck and bus bodies, \$79.3 million were products primary to other industries; and \$65.2 million were receipts for miscellaneous activities. The industry shipments of primary products represented 88 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was also 88 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)							
	INDUSTRY 3713.--TRUCK AND BUS BODIES													
1967 Census....	629	248	30.4	192.8	24.6	49.3	139.5	332.8	374.0	704.0	13.5	129.6	88	92
1966 ASM <sup>1</sup> .....	(NA)	(NA)	31.6	191.1	25.8	53.7	139.8	322.3	409.7	718.6	38.5	128.4	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	28.0	164.8	22.5	47.3	120.7	273.2	300.9	569.8	10.1	97.5	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	26.0	143.8	20.8	42.3	103.7	243.1	273.9	507.6	10.6	90.5	(NA)	(NA)
1963 Census....	610	208	24.5	133.3	19.7	40.9	98.4	229.5	250.2	476.7	6.6	74.3	88	86
1962 ASM <sup>1</sup> .....	(NA)	(NA)	25.1	131.7	19.7	41.2	94.4	200.3	317.9	504.0	*6.9	92.0	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	23.2	115.6	18.3	36.6	80.9	160.3	216.9	374.1	33.8	69.0	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	24.2	120.1	21.2	37.7	87.5	172.7	223.7	394.8	(S)	68.5	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	22.8	108.9	18.0	35.7	78.0	157.6	207.5	362.8	(S)	67.3	(NA)	(NA)
1958 Census <sup>2</sup> ...	562	187	20.0	91.4	15.9	30.7	65.4	145.6	163.7	307.8	3.6	61.2	87	87

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

(S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 8 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director



The total value of truck and bus bodies shipped by all producers in 1967 was \$603.8 million of which \$559.5 million, or 92 percent, were shipped by plants classified in industry 3713, Truck and Bus Bodies, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 86 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
INDUSTRY 3713.--TRUCK AND BUS BODIES													
United States, total.....	629	248	30.4	192.8	24.6	49.3	139.5	332.8	374.0	704.0	13.5	24.5	229.5
New England.....	37	9	0.6	3.7	0.5	0.9	2.6	6.2	8.9	14.6	0.1	0.4	3.5
Massachusetts.....	17	7	0.4	2.3	0.3	0.6	1.6	3.6	5.9	9.4	0.1	(D)	(D)
Connecticut.....	12	-	0.1	0.4	0.1	0.1	0.4	0.9	0.9	1.5	(Z)	(D)	(D)
Middle Atlantic.....	110	40	3.3	19.2	2.7	5.4	14.2	29.7	36.0	65.2	1.3	3.4	25.9
New York.....	40	13	1.0	5.9	0.8	1.6	4.2	8.3	11.7	19.9	0.8	1.1	8.4
New Jersey.....	24	7	0.5	3.4	0.5	0.9	2.5	4.9	6.9	12.0	0.1	0.6	4.8
Pennsylvania.....	46	20	1.8	9.9	1.5	2.9	7.4	16.5	17.3	32.3	0.4	1.7	12.8
North Central.....	202	101	16.3	109.8	13.0	26.2	79.7	192.4	201.3	393.8	7.9	12.9	125.6
Minnesota.....	15	8	0.3	2.5	0.3	0.5	1.6	3.9	6.7	10.6	0.1	0.3	3.1
Missouri.....	29	15	1.5	9.1	1.2	2.3	6.2	13.8	18.5	32.8	0.3	1.1	11.9
South Atlantic.....	73	26	3.5	19.1	2.9	5.7	13.6	32.2	39.2	71.6	1.1	2.8	22.3
Maryland.....	10	3	0.2	1.0	0.1	0.3	0.8	1.5	2.6	4.0	0.1	0.2	1.0
West Virginia.....	4	1	0.1	0.3	0.1	0.1	0.2	0.6	0.3	1.0	(Z)	(D)	(D)
North Carolina.....	15	8	1.3	7.1	1.1	2.2	5.1	13.3	13.2	26.5	0.2	(D)	(D)
Florida.....	13	4	0.2	1.3	0.2	0.4	0.9	2.3	3.3	5.6	0.1	(D)	(D)
East South Central....	38	15	1.6	8.4	1.4	2.8	6.4	15.0	22.8	37.5	(D)	1.2	12.5
Tennessee.....	11	4	0.3	1.2	0.2	0.4	0.8	2.1	3.1	5.2	0.1	(D)	(D)
West South Central....	48	15	1.6	8.2	1.4	2.8	6.2	15.4	20.2	35.3	(D)	1.0	9.0
Texas.....	28	10	0.8	4.4	0.7	1.4	3.4	8.6	11.4	19.9	0.2	0.5	5.3
Mountain.....	17	3	0.2	1.3	0.2	0.3	0.8	2.0	2.0	4.0	0.1	0.2	1.3
Pacific.....	104	39	3.3	23.0	2.5	5.2	15.9	40.0	43.6	81.8	1.2	2.6	29.3
Washington.....	9	3	0.2	1.1	0.1	0.2	0.8	1.8	3.4	5.3	0.2	0.2	2.2
Oregon.....	11	5	0.3	2.0	0.2	0.4	1.5	3.0	3.6	6.5	0.1	0.3	3.4
California.....	84	31	2.8	19.9	2.2	4.6	13.6	35.2	36.6	70.0	0.9	2.2	23.7

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (thousands)	Value (million dollars)	Quantity (thousands)	Value (million dollars)
3713- --	TRUCK AND BUS BODIES, TOTAL.....	(X)	<sup>1</sup> 603.8	(X)	<sup>1</sup> 419.7
	Truck, bus and other vehicle (except passenger car) bodies sold separately: <sup>1</sup>				
37130 12	To motor vehicle manufactures, including interplant transfers.....	102.1	78.2	<sup>r</sup> 77.9	<sup>r</sup> 52.3
	To other than motor vehicle manufactures (including bodies installed on chassis owned by others):				
	Truck bodies:				
37130 21	Van.....	27.0	32.7	30.6	44.0
37130 23	Multistop.....	11.1	18.1	(NA)	(NA)
37130 25	Pick up.....	1.9	3.7	<sup>r</sup> 9.1	<sup>r</sup> 12.4
37130 27	Panel.....	6.3	7.4		
37130 33	Dump.....	47.9	42.6	31.7	30.3
37130 34	Stake and platform.....	32.5	14.0	24.1	9.3
37130 36	Utility, including service and line construction, and repair types..	42.7	52.3	28.3	34.3
37130 37	Tank including street flushing petroleum and other tank types.....	1.7	6.9	1.4	4.3
37130 38	Refuse and garbage (packer type).....	7.8	36.6	4.9	22.1
37130 39	Other.....	34.0	40.0	23.0	32.5
37130 51	Bus bodies.....	26.8	62.9	18.3	41.3
37130 55	Other vehicle (except passenger car) bodies (ambulance, hearse, fire department, etc.).....	16.0	23.0	9.5	17.6
	Complete vehicles (except passenger cars) produced on purchased chassis:				
37130 71	Ambulances.....	3.5	20.5	2.3	15.9
37130 75	Hearse and undertakers' vehicles (except limousines).....	1.7	12.9	1.3	9.8
37130 77	Fire department vehicles.....	2.0	17.9	1.3	13.6
37130 79	Busses (body mounted on purchased chassis), including military, but excluding trolley busses.....	(X)	65.5	(X)	42.3
37130 98	All other highway vehicles, including trucks (platform, stake, van, tank, dump, etc.), street cleaning apparatus, rotary and blow-type snowplows, pick-up sweepers, noncombat amphibious vehicles, etc.....				
37130 99	Vehicles, except passenger cars, produced on purchased chassis (including value of chassis), n.s.k.....			(X)	10.1
37130 00	Truck and bus bodies, n.s.k. (Represents establishments with 10 employees or more in 1967. See Note.).....	(X)	52.8	(X)	27.6
37130 02	Truck and truck bus bodies, n.s.k. (Represents establishments with fewer than 10 employees in 1967. See Note.).....	(X)	15.8		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. <sup>r</sup>Revised. (X) Not applicable.

<sup>1</sup>Truck and bus bodies built by garages, service stations, and other establishments primarily engaged in nonmanufacturing activities are excluded.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3713.--TRUCK AND BUS BODIES					
	Materials, parts, containers and supplies, total.....		(X)	327.0	(X)	224.3
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons..	31.7	5.6	23.1	3.9
331012	Sheet and strip.....	..do.....	262.9	43.4	176.2	28.7
331013	Plates.....	..do.....	52.6	7.8	37.8	5.4
331015	Structural shapes.....	..do.....	32.7	5.3	21.4	3.3
331017	Wire and wire products.....	..do.....	3.5	0.9	0.5	0.2
331019	All other carbon steel mill shapes and forms.....	..do.....	8.9	2.5	18.9	3.8
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	..do.....	0.9	0.3	0.3	0.1
331029	All other alloy mill shapes and forms.....	..do.....	11.6	2.6	2.4	0.5
331031	Stainless steel.....	..do.....	0.8	0.8	0.6	0.7
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction only).....	Million lbs.....	(D)	(D)	-	-
335790	Insulated wire and cable.....	Million lbs. (copper content).	0.3	0.3	0.1	0.1
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	(NA)	1.7	0.2	0.1
335123	Plate, sheet, and strip, including military cups and discs....	..do.....	(NA)	1.5	0.2	0.1
335127	Pipe and tube.....	..do.....	(NA)	1.5	0.2	0.1
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	..do.....	19.0	11.2	13.5	6.3
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.	..do.....	8.3	4.3	6.5	2.8
335209	All other aluminum mill shapes and forms (wire, rolled rod, bar, powder, welded tubing, etc.).....	..do.....	2.8	1.4	0.5	0.3
	Primary metals and scrap:					
331051	Pig iron (excluding silvery iron).....	1,000 tons.....	-	-	(D)	(D)
333401	Aluminum and aluminum-base alloy refinery shapes.....	..do.....	(D)	(D)	(D)	(D)
999811	Iron and steel scrap.....	..do.....	(D)	(D)	(D)	(D)
999808	Aluminum and aluminum-base alloy scrap.....	..do.....	(D)	(D)	(NA)	(NA)
	Castings (rough and semifinished): <sup>1</sup>					
332011	Iron (gray and malleable).....	..do.....	7.1	3.2	2.7	0.9
332300	Steel.....	..do.....	6.6	2.9	1.3	0.8
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	0.8	0.7	0.2	0.2
336200	Copper and copper-base alloy.....	..do.....	0.3	0.3	0.1	0.1
	Forgings: <sup>1</sup>					
339100	Iron and steel.....	1,000 short tons..	0.7	0.4	0.4	0.2
339200	Aluminum and aluminum-base alloy.....	Million lbs.....	(D)	(D)	(D)	(D)
362115	Fractional horsepower electric motors (under 1 hp.) Excluding timing motors <sup>1</sup> .....	1,000 units.....	81.6	0.4	(D)	(D)
362115	Bearings:					
356218	Ball.....	..do.....	-	0.3	(X)	0.1
356201	Roller.....	..do.....	-	0.2		
229501	Coated, impregnated or laminated fabrics.....	Million lin. yds..	258.6	0.9	(D)	(D)
	Uncoated broad-woven fabrics (piece goods):					
221103	Cotton.....	..do.....	23.3	0.1	(NA)	(NA)
220119	Other broadwoven fabrics.....	..do.....	3.5	0.1	(NA)	(NA)
282130	Thermoplastic resins including modified resins.....	Million lbs. dry basis.....	0.9	0.3	0.1	0.1
282140	Thermosetting resins.....	..do.....	1.1	0.4	0.8	0.2
970099	All other materials and components, parts, containers, and supplies consumed.....	..do.....	(X)	172.4	(X)	115.1
976000	Materials, parts, containers and supplies, n.s.k. <sup>2</sup> .....	..do.....	(X)	54.8	(X)	50.3

-Represents zero. (D) Included with material code 970099 "All other materials and components, etc." to avoid disclosing the operations of individual companies. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>No data are available on the quantities of castings, forgings or fractional horsepower electric motors produced and consumed in the same establishment.

<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



## 1967 CENSUS OF MANUFACTURES

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3713, these small establishments accounted for approximately 2 percent of payrolls and 2 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

Motor vehicles

SIC Code 3711

Motor vehicle parts and accessories

SIC Code 3714

**preliminary  
report**

The Motor Vehicles Industry includes establishments primarily engaged in manufacturing or assembling complete passenger automobiles, trucks, commercial cars and busses (except trackless trolleys--industry 3742), special purpose motor vehicles and passenger car bodies (SIC 3712). Such establishments may also man-

ufacture motor vehicle parts, but establishments primarily engaged in manufacturing motor vehicle parts and which are not engaged in manufacturing complete motor vehicles are classified in industry 3714. Establishments primarily engaged in manufacturing truck and bus bodies and assembling them on purchased chassis are

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3711.--MOTOR VEHICLES (INCLUDING SIC 3712)														
1967 Census....	171	128	320.2	2,690.2	261.6	522.4	2,091.5	7,406.2	19,848.9	27,234.1	260.5	1,781.5	96	99+
INDUSTRY 3714.--MOTOR VEHICLE PARTS AND ACCESSORIES														
1967 Census....	1,677	789	369.2	2,923.2	303.9	616.1	2,270.7	5,769.4	5,980.2	11,718.4	575.7	1,482.0	90	89
INDUSTRY 3711 AND 3714.--MOTOR VEHICLES AND PARTS (PREVIOUSLY IDENTIFIED AS CENSUS CODE 3717, REVISED) <sup>1</sup>														
1967 Census....	1,948	917	689.3	5,613.4	565.5	1,138.5	4,362.1	13,175.6	<sup>2</sup> 25,829.2	<sup>2</sup> 38,952.5	836.2	3,263.6	(NA)	(NA)
1966 ASM <sup>3</sup> .....	(NA)	(NA)	738.2	5,965.4	614.8	1,298.0	4,734.8	14,476.6	<sup>2</sup> 29,308.0	<sup>2</sup> 43,541.0	1,001.7	3,230.3	(NA)	(NA)
1965 ASM <sup>3</sup> .....	(NA)	(NA)	715.7	5,779.0	595.3	1,311.0	4,584.7	14,691.3	<sup>2</sup> 29,387.6	<sup>2</sup> 43,901.7	1,060.0	3,078.4	(NA)	(NA)
1964 ASM <sup>3</sup> .....	(NA)	(NA)	628.6	4,818.5	517.5	1,122.9	3,767.1	11,975.3	<sup>2</sup> 23,644.9	<sup>2</sup> 35,459.6	794.6	2,721.3	(NA)	(NA)
1963 ASM <sup>3</sup> .....	1,942	893	599.9	4,495.1	493.9	1,098.1	3,547.3	11,433.9	<sup>2</sup> 22,954.0	<sup>2</sup> 34,333.8	602.7	2,318.7	97	98
INDUSTRY 3711 AND 3714.--MOTOR VEHICLES AND PARTS (PREVIOUSLY IDENTIFIED AS CENSUS CODE 3717, UNREVISED) <sup>1</sup>														
1966 ASM <sup>2</sup> .....	(NA)	(NA)	800.2	6,552.6	667.7	1,412.7	5,167.1	15,507.6	<sup>2</sup> 30,466.2	<sup>2</sup> 45,767.8	1,118.7	3,461.3	(NA)	(NA)
1965 ASM <sup>2</sup> .....	(NA)	(NA)	775.5	6,347.1	646.1	1,426.8	5,049.1	15,868.7	<sup>2</sup> 30,591.5	<sup>2</sup> 46,292.9	1,232.5	3,296.2	(NA)	(NA)
1964 ASM <sup>2</sup> .....	(NA)	(NA)	681.7	5,306.8	562.3	1,226.4	4,165.2	13,071.3	<sup>2</sup> 24,627.6	<sup>2</sup> 37,462.7	878.9	2,948.9	(NA)	(NA)
1963 Census....	1,958	909	649.9	4,947.3	535.8	1,192.6	3,889.6	12,345.6	<sup>2</sup> 23,889.4	<sup>2</sup> 36,181.0	643.6	2,470.8	97	98
1962 ASM <sup>2</sup> .....	(NA)	(NA)	628.4	4,465.4	517.2	1,110.2	3,484.0	11,110.9	<sup>2</sup> 21,573.8	<sup>2</sup> 32,673.8	492.2	2,261.4	(NA)	(NA)
1961 ASM <sup>2</sup> .....	(NA)	(NA)	569.6	3,780.0	460.3	945.1	2,881.5	8,541.7	<sup>2</sup> 17,199.0	<sup>2</sup> 25,847.7	381.6	2,062.3	(NA)	(NA)
1960 ASM <sup>2</sup> .....	(NA)	(NA)	658.1	4,319.9	540.8	1,131.5	3,378.3	9,717.4	<sup>2</sup> 20,312.6	<sup>2</sup> 30,110.1	462.4	2,061.3	(NA)	(NA)
1959 ASM <sup>2</sup> .....	(NA)	(NA)	599.9	3,914.5	489.4	1,058.0	3,019.1	8,915.4	<sup>2</sup> 17,913.7	<sup>2</sup> 26,712.8	386.6	2,170.0	(NA)	(NA)
1958 Census <sup>4</sup> ....	1,560	753	546.0	3,169.2	434.0	858.4	2,374.4	6,504.5	<sup>2</sup> 14,189.0	<sup>2</sup> 20,830.1	334.1	1,780.2	96	99

(NA) Not available.

<sup>1</sup>Data for 1963 to 1966 have been revised by the exclusion of automotive stamping plants operated by automobile producing companies. As a result of this revision, these plants are now classified in the metals stampings industry. The data shown including such plants (unrevised) for the years 1958 to 1966 are as previously published for this industry. The area data for prior years have not been revised on a basis comparable to 1967 but are shown in table 2 on the unrevised basis.

<sup>2</sup>Includes extensive duplication arising from shipments between establishments in the same industry classification.

<sup>3</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1 percent, respectively.

<sup>4</sup>Some of the small establishments in this industry may have been misclassified as to industry. This does not significantly affect the statistics other than the number of establishments. (See section of text on scope and coverage for further explanation.)

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For sale by the Bureau of the Census, Wash., D.C., 20733 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**



classified in industry 3713; motorcycles in industry 3751; wheel tractors, except contractors' off-highway types, in industry 3522; tracklaying and contractors' off-highway tractors in industry 3531; and combat tanks in industry 1931.

The Motor Vehicle Parts and Accessories Industry includes establishments primarily engaged in manufacturing motor vehicle parts and accessories, but not engaged in manufacturing complete motor vehicles. Establishments primarily engaged in manufacturing or assembling complete automobiles and trucks are classified in industry 3711, tires and tubes in industry 3011, automobile glass in Major Group 32, automobile stampings in industry 3461, vehicular lighting equipment in industry 3642, ignition systems in industry 3694, and storage batteries in industry 3691.

Prior to 1967, tabulation of data for the automotive industry was based on use of census code 3717. For 1967 data were collected based on the classification of establishments as defined in the 1967 edition of the Standard Industrial Classification (SIC) Manual. An exception is made in this report in that SIC 3711 and SIC 3712 have been combined.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Motor Vehicles Industry amounted to \$27,234.1 million. Value added by manufacture was \$7,406.2 million in 1967. Average employment in the industry in 1967 was 320.2 thousand.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the motor vehicle parts and accessories industry amounted to \$11,718.4 million. Value added by manufacture was \$5,769.4 million in 1967. Average employment in the industry in 1967 was 369.2 thousand.

Of the \$27,234.1 million total value of shipments and other receipts of establishments classified as Motor Vehicles, \$883.9 million were products primary to other industries; and \$566.0 million were receipts for miscellaneous activities. The industry shipments of primary products represented 96 percent of the total manufactured product shipments, primary and secondary. This is called the specialization ratio for the industry.

Of the \$11,718.4 million total value of shipments and other receipts of establishments classified as Motor Vehicle Parts and Accessories, industries; and \$210.1 million were receipts for miscellaneous activities. The industry shipments of primary products represented 90 percent of the total manufactured product shipments, primary and secondary.

The total value of motor vehicles shipped by all producers in 1967 was \$25,897.3 million of which \$25,784.2 million, or 99 percent, were shipped by plants classified in industry 3711, Motor Vehicles, while the remainder was shipped by plants classified in other industries. This percent is called the coverage ratio.

The total value of motor vehicle parts and accessories shipped by all producers in 1967 was \$11,589.6 million of which \$10,332.6 million, or 89 percent, were shipped by plants classified in industry 3714, Motor Vehicle Parts and Accessories, while the remainder was shipped by plants classified in other industries.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.



TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)				
1967											
INDUSTRY 3711.--MOTOR VEHICLES											
United States, total.....	171	128	320.2	2,690.2	261.6	522.4	2,091.5	7,406.2	19,848.9	27,234.1	260.5
East North Central.....	73	62	206.3	1,755.6	168.2	339.6	1,366.0	4,360.4	11,553.5	15,931.4	171.6
Ohio.....	20	14	30.1	236.2	24.0	47.9	183.3	574.0	1,778.4	2,358.5	20.6
INDUSTRY 3714.--MOTOR VEHICLE PARTS AND ACCESSORIES											
United States, total.....	1,677	789	369.2	2,923.2	303.9	616.1	2,270.7	5,769.4	5,980.2	11,718.4	575.7
Middle Atlantic:											
New York.....	97	40	30.2	246.4	25.0	50.5	195.6	518.3	538.9	1,056.5	(D)
New Jersey.....	47	20	3.0	19.4	1.9	3.9	11.2	44.3	45.7	89.3	2.5
North Central:											
Ohio.....	147	92	67.1	545.4	56.4	111.7	433.6	1,052.4	1,073.3	2,117.2	121.8
Illinois.....	110	49	11.2	75.5	9.0	18.2	53.8	143.8	124.1	268.1	7.4
Iowa.....	18	8	1.0	5.5	0.8	1.8	4.2	14.2	16.4	30.7	1.0
Missouri.....	40	21	6.2	39.7	4.8	9.6	26.7	47.7	63.6	121.0	3.9
Kansas.....	14	2	0.3	1.6	0.2	0.4	1.1	3.0	3.0	6.3	0.2
South:											
Georgia.....	32	14	1.7	8.8	1.5	3.1	7.3	30.7	17.1	47.8	0.9
Kentucky.....	12	9	1.7	10.1	1.4	2.7	8.3	19.9	24.8	43.8	0.9
West:											
Washington.....	18	2	0.2	1.7	0.2	0.4	1.3	3.4	2.3	5.7	0.1
1963											
INDUSTRIES 3711 AND 3714.--MOTOR VEHICLES AND PARTS <sup>1</sup>											
United States, total.....	1,958	909	649.9	4,947.3	535.8	1,192.6	3,889.6	12,345.6	<sup>2</sup> 23,889.4	<sup>2</sup> 36,181.0	643.6
New England.....	67	24	7.2	45.7	5.7	12.5	32.9	118.6	240.0	353.8	4.7
Connecticut.....	17	8	3.7	21.9	2.9	5.6	14.8	36.1	42.0	72.9	1.4
Middle Atlantic.....	215	97	64.1	493.2	51.3	115.0	378.7	1,167.9	2,362.6	3,521.3	63.6
New York.....	95	44	38.4	296.8	31.1	70.4	232.0	625.3	1,118.1	1,740.3	38.4
East North Central.....	799	476	479.4	3,672.1	398.2	877.3	2,912.5	8,460.9	14,769.4	23,193.4	436.3
Ohio.....	180	121	105.2	792.2	87.4	190.7	631.2	1,820.7	2,813.1	4,632.9	78.4
Indiana.....	108	67	57.0	394.7	46.8	95.1	304.8	734.9	982.7	1,730.3	34.6
Michigan.....	333	200	261.2	2,087.4	215.7	488.8	1,649.9	4,881.3	9,041.2	13,879.4	287.4
West North Central.....	115	53	29.5	229.8	24.4	57.4	179.9	853.3	2,242.3	3,095.8	37.7
Iowa.....	17	8	0.5	2.7	0.5	1.0	2.1	7.3	7.0	14.1	0.5
South Atlantic.....	140	48	25.6	199.2	20.8	49.9	154.8	724.2	1,871.7	2,588.3	21.8
North Carolina.....	20	4	1.1	4.7	0.9	1.8	3.5	11.2	8.1	18.9	1.2
Florida.....	42	5	0.4	1.6	0.3	0.6	1.2	2.7	2.8	5.5	1.7
East South Central.....	62	42	9.9	58.0	8.1	17.9	42.2	252.7	347.8	597.5	9.7
Alabama.....	12	6	0.8	4.1	0.8	1.6	3.2	8.5	8.8	17.1	0.4
Mississippi.....	8	7	1.5	7.0	1.2	2.6	4.7	16.4	12.9	27.6	1.0
West South Central.....	153	46	7.6	52.8	6.2	15.2	40.3	189.5	404.9	592.3	10.6
Oklahoma.....	27	7	1.2	6.2	1.0	2.2	4.7	17.3	9.2	25.3	4.7
Mountain.....	63	13	1.0	5.1	0.8	1.6	3.6	9.6	9.2	17.4	1.7
Colorado.....	25	10	0.7	3.7	0.5	1.0	2.5	7.3	6.5	12.5	(D)
Pacific.....	344	110	25.6	191.3	20.2	46.0	144.8	568.9	1,641.6	2,221.3	57.4
California.....	307	102	23.2	176.0	18.5	42.6	133.9	541.2	1,586.1	2,138.6	55.7

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

<sup>1</sup>Data for 1963 are not comparable to the 1967 information. (See footnote 1, table 1.)

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000 units)	Value (million dollars)	Quantity (1,000 units)	Value (million dollars)
3711- --	MOTOR VEHICLES, TOTAL.....	(X)	25,897.3	(X)	<sup>1</sup> 20,327.0
37111 --	Passenger cars, knocked down or assembled, and chassis for sale separately	7,319.7	19,276.3	7,567.4	<sup>1</sup> 6,768.3
37111 11	Complete vehicles, knocked down or assembled, including station wagons, ambulances, hearses, and taxicabs if produced on passenger car chassis. For vehicles assembled abroad, value is on the same basis as for domestic interplant shipments of knock-down vehicles.....	7,319.7	19,276.3	7,567.4	16,768.3
37111 51	Chassis for sale separately.....				
37112 --	Truck tractors, truck chassis and trucks (chassis of own manufactured) Trucks, truck tractors, and truck chassis, knocked down or assembled, including trucks such as pickup, panel delivery, or other commercial cars made on passenger car chassis if these chassis are of own manufacture (including station wagons, ambulances, hearses, and taxicabs if produced on truck chassis, and all truck chassis whether or not to be used for transportation of property, such as fire apparatus, street sprinklers, school buses, ambulances, etc.) (excluding specialized road construction machinery and off-the-highway trucks).....	(X)	4,242.6	(X)	3,376.2
	Trucks and truck tractors:				
	By gross vehicle weight:				
37112 11	6,000 pounds and less.....	918.3	1,713.5	876.1	3,375.7
37112 13	6,001 to 10,000 pounds.....	287.0	589.6	178.7	
37112 15	10,001 to 14,000 pounds.....	11.0	25.5	25.1	
37112 17	14,001 to 16,000 pounds.....	12.7	32.5		
37112 21	16,001 to 19,500 pounds.....	81.6	239.6	116.6	
37112 23	19,501 to 26,000 pounds.....	106.4	400.0	109.9	
37112 25	26,001 to 33,000 pounds.....	41.0	292.1	27.8	
37112 27	33,001 to 44,000 pounds.....	43.9	492.4		
37112 28	Over 44,000 pounds.....	34.6	449.8	47.3	
	Number shipped by body type:				
37112 31	Pickup.....	809.3	(X)		
37112 33	Panel.....		(X)		
37112 35	Multistop.....	26.5	(X)		
37112 37	Van.....	119.4	(X)		
37112 41	Station wagon.....	51.4	(X)		
37112 45	General utility.....		(X)	(NA)	(X)
37112 49	Other body types.....	95.3	(X)		
	Chassis:				
37112 53	With cab.....	391.8	(X)		
37112 55	Without cab.....	39.5	(X)		
37112 00	Trucks tractors, truck chassis and trucks not specified by kind.....	(X)	7.6	(X)	0.5
37113 --	Buses (except trolley buses) and fire department vehicles (chassis of own manufacture).....	(X)	179.8	(X)	182.5
37113 13	Buses (body mounted on chassis of own manufacture), including military but excluding trolley buses.....	<sup>e</sup> 1.0	17.9		
37113 15	Buses (consisting of integrally constructed body-chassis frame usually rear-engine mounted) such as those usually delivered to common carriers or franchised operators for city and inter-city transit, charter hire, or sightseeing; school and Government.....	8.1	141.6	(NA)	155.5
37113 21	Fire department vehicles <sup>2</sup> .....	0.6	20.3	1.5	26.9
37114 11	Combat vehicles, wheeled or tracked tactical vehicles or carriers (excluding tanks).....	(NA)	2,161.9		
37115 11	Passenger car bodies.....				( <sup>1</sup> )
37110 00	Motor vehicles, not specified by kind.....	(X)	36.7		

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Products	1967						1963 (million dollars)
		Total shipments, including interplant transfers		Domestic shipments for replacement including shipments to U.S. motor vehicle manufacturers for resale <sup>a</sup>		Shipments to U.S. motor vehicle manufacturers or their suppliers for use in original equipment <sup>a</sup> (million dollars)	Shipments for export (including transfers to other divisions for export <sup>a</sup> ) (million dollars)	
		Quantity (million units)	Value (million dollars)	Quantity (million units)	Value (million dollars)			
3714- --	MOTOR VEHICLE PARTS AND ACCESSORIES <sup>1</sup> --Continued.....	(X)	11,589.6	(X)	(X)	(X)	(X)	<sup>1</sup> 513,386.1
37141 --	Parts and accessories for motor vehicles, passenger cars, trucks and buses.....	(X)	11,180.5	(X)	(X)	(X)	(X)	<sup>1</sup> 512,975.8
	Parts and accessories for motor vehicles, passenger cars, trucks and buses, excluding not specified by kind.....	(X)	11,134.9	(X)	1,954.5	8,685.7	494.2	<sup>1</sup> 512,938.0
38141 11	Gasoline engines, new (with or without cylinder heads, fuel pumps, water pumps, and other standard accessories).....	7.1	1,770.9	0.1	36.0	1,650.9	84.0	} <sup>1</sup> 52,938.0
37141 17	Hub and drum assemblies.....	39.1	212.6	2.5	15.6	193.4	3.6	
						22.4		
37141 21	Fuel pump assemblies excluding kits and rebuilds.....	16.0	44.4	5.0	22.0			
37141 23	Water pump assemblies, excluding kits and rebuilds.....	4.8	23.8	(NA)	17.1	4.8	1.8	
	Exhaust systems:							
37141 27	Mufflers, including regular or standard, sports or glass pack and resonators.....	47.0	143.8	27.1	78.3	64.4	1.0	
37141 29	Pipes, including exhaust, tail, intermediate, connecting and crossover.....	63.8	94.4	36.0	49.0	44.8	0.7	
37141 31	Radiators, complete.....	9.5	207.4	1.0	7.8	199.6		
	Brake cylinders:							
37141 32	Wheel.....	45.1	38.6	16.8	15.0	21.6	2.0	
37141 34	Master.....	9.8	42.5	2.8	14.8	26.1	1.7	
	Wheels:							
37141 35	Passenger car type.....	44.4	118.2	3.2	20.5	97.7		
37141 37	Truck and bus type, including those for truck trailers and trailer coaches.....	10.4	140.8	(NA)		140.8		
	Transmissions, except auxiliary:							
	Passenger car type:							
37141 41	Conventional transmissions.....	0.9	79.3	(NA)	10.7	63.0	5.5	
37141 43	Automatic transmissions.....	6.9	937.4	(NA)	6.0	889.5	41.9	
	Truck and bus type:							
37141 45	Conventional transmissions.....	1.4	272.4	(NA)		272.4		
37141 47	Automatic transmissions.....							
37141 51	Universal joints.....	41.5	70.3	4.8	11.8	54.6	3.9	
37141 61	Shock absorbers.....	41.1	105.9	23.4	74.0	27.1	4.8	
37141 81	Clutch disc and facing assemblies.....	9.9	69.2	(NA)	(NA)	(NA)	(NA)	
37141 25, 87, 98	All other parts and accessories for passenger cars, trucks and buses, including oil filter elements and convertible tops.....	(X)	6,763.0	(X)	1,497.6	4,959.2	306.1	
37141 00	Parts and accessories for motor vehicles, passenger cars, trucks and buses, not specified by kind.....	(X)	45.6	(X)	(X)	(X)	(X)	
37143 --	Rebuilt parts for motor vehicles excluding carburetors.....	(X)	198.5	(X)	(X)	(X)	(X)	
37143 21	Fuel pumps.....	<sup>6</sup> 8.1	<sup>6</sup> 15.9	(X)	(X)	(X)	(X)	
37143 23	Water pumps.....	(NA)	<sup>6</sup> 9.0	(X)	(X)	(X)	(X)	
37143 26	Clutch discs and pressure plates.....	<sup>6</sup> 5.3	<sup>6</sup> 29.4	(X)	(X)	(X)	(X)	
38143 31	Engines, gasoline.....	<sup>6</sup> 0.3	<sup>6</sup> 45.2	(X)	(X)	(X)	(X)	
37143 44	Automatic transmissions.....	(NA)	<sup>6</sup> 5.1	(X)	(X)	(X)	(X)	
37143 98	All other rebuilt parts.....	(X)	<sup>6</sup> 91.3	(X)	(X)	(X)	(X)	
37143 00	Rebuilt parts for motor vehicles, except carburetors, not specified by kind.....	(X)	2.6	(X)	(X)	(X)	(X)	
37140 00	Motor vehicle parts and accessories (Represents establishments with 10 employees or more in 1967. See Note.)....	(X)	179.3	(X)	(X)	(X)	(X)	
37140 02	Motor vehicle parts and accessories (Represents establishments with fewer than 10 employees in 1967. See Note.)....	(X)	31.5	(X)	(X)	(X)	(X)	

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

Footnotes continued on next page.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963--Continued

FOOTNOTES FOR TABLE 3-37A--Continued

<sup>8</sup> From 10 to 30 percent of this figure was estimated. (NA) Not available. (X) Not applicable.<sup>1</sup> For 1963, product codes 3711411, combat vehicles, and 3711000, motor vehicles n.s.k., were combined with product code 3714000, Motor vehicles parts and accessories, n.s.k. However, product code 3711511, Passenger car bodies, was included in product class code 37141, Motor vehicle parts and accessories.<sup>2</sup> These figures represent fire department vehicles produced on chassis of own manufacture. Separate figures are shown for fire department vehicles produced on purchased chassis (code 3713077). A small number of fire department vehicles are produced on chassis furnished by customers.<sup>3</sup> Motor vehicle parts data were published in the 1963 Census of Manufactures in Table 6E, "Production and Use of Selected Parts of the Type Used for Passenger Cars, Trucks, and Buses," of report MC63(2)-37A, Motor Vehicles and Equipment. There are significant differences in the manner in which the data were developed in the two Censuses including the following:

a. In 1963, a total production figure was typically collected including, where appropriate, the quantities produced and consumed in the same establishment in producing a more finished product. In 1967 production figures were collected but could not be published because they were incomplete.

b. In 1963, separate quantity data were reported for the quantities of equipment "used in the assembly of new vehicles." These data were collected from automobile assembly plants and included the quantities of parts produced and consumed in the assembly of new vehicles. For 1967 a value, rather than a quantity figure was collected and the data were reported by the plants producing the parts rather than by the assembly plants. No values are included for the quantities of parts produced and consumed in the same plant. The value of parts shipped as interplant transfers from parts plants to assembly plants owned by the same company are included in both 1963 and 1967.

c. In 1963, the quantity of parts "for replacement, export, and other purposes" was derived by subtracting from the total number of units produced the quantities used in the assembly of new vehicles as reported by motor vehicle assembly plants. In 1967, the quantity and value shipped by parts producers for replacement was reported separately and, in addition, a value of export shipments was reported by parts producing plants.

<sup>4</sup> These figures are limited to shipments of products classified in industry 3714.<sup>5</sup> Data for motor vehicle parts and accessories for 1963 have been revised to exclude the output of the automotive stampings plants operated by automobile producing companies.<sup>6</sup> Data are limited to rebuilding on a factory basis. Rebuilding operations performed in service stations, garages, etc., are excluded from the census of manufactures. Also, these figures may be somewhat understated because of the exclusion of data for establishments with fewer than 10 employees. Such establishments were typically not included in the mail portion of the 1967 Census of Manufactures, but were included in the published data by the use of estimates from administrative records. These estimates are included in the value shown for product code 3714002. Although the use of such administrative records tend to create a small understatement for most specific products, the effect is more significant for those products typically produced in small establishments, such as rebuilding facilities.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967						1963	
			Industry 3711.--Motor vehicles		Industry 3714.--Motor vehicle parts and accessories		Total of industries 3711 and 3714		industries 3711 and 3714	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	Materials, parts, containers and supplies, total.....		(X)	17,467.1	(X)	5,769.6	(X)	23,236.7	(X)	22,596.8
	Mill shapes and forms (except castings):									
	Carbon steel:									
331011	Bars and bar shapes.....	1,000 tons.....	145.2	23.6	769.6	140.6	914.8	164.2	1,006.4	165.0
331012	Sheet and strip.....	do.....	1,164.4	198.0	5,106.5	782.7	6,270.9	980.7	1,059.7	1,892.3
331013	Plates.....	do.....	23.9	4.1	287.2	44.0	311.1	48.1	333.8	48.1
331015	Structural shapes.....	do.....	15.3	3.1	21.5	3.4	36.8	6.5	26.8	4.2
331017	Wire and wire products.....	do.....	1.4	0.5	226.7	52.8	228.1	53.3	142.0	133.7
331019	All other carbon steel mill shapes and forms.....	do.....	16.5	4.5	141.0	45.1	157.5	49.6	280.4	58.3
	Alloy steel (except stainless):									
331021	Bars and bar shapes.....	do.....	106.4	26.0	326.5	65.3	432.9	91.3	534.1	111.7
331029	All other alloy mill shapes and forms	do.....	20.1	4.7	52.8	27.4	72.9	32.1	81.2	37.8
331031	Stainless steel.....	do.....	1.0	0.8	27.3	25.2	28.3	26.0	37.7	31.7
	Copper and copper-base alloy:									
335728	Bare wire for electrical conduction.	Million lbs.....	(D)	(D)	(D)	(D)	(D)	(D)	1.7	1.1
335790	Insulated wire and cable.....	Million lbs. (copper content)	5.0	4.0	30.7	18.3	35.7	22.3	31.3	15.5
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	2.3	1.5	59.4	27.0	232.3	120.5	50.4	18.3
335123	Plate, sheet, and strip, including military cups and discs.....	do.....			170.6	92.0			163.6	74.4
335127	Pipe and tube.....	do.....			( <sup>2</sup> )	( <sup>2</sup> )			12.1	7.5
	Aluminum and aluminum-base alloy:									
335202	Sheet, plate, and foil.....	do.....	25.3	11.3	52.4	26.2	77.7	37.5	77.5	33.4
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	do.....	7.4	3.6	21.3	12.2	28.7	15.8	22.8	11.2
335209	All other aluminum mill shapes and forms (wire, rolled rod, bar, powder, welded tubing, etc.).....	do.....	1.5	0.8	5.0	3.0	6.5	3.8	17.3	5.3
339915	Metal powders.....	do.....	(D)	(D)	51.6	15.3	(D)	(D)	(NA)	(NA)
	Primary metals:									
331051	Pig iron (excluding silvery iron).....	1,000 short tons.	(D)	(D)	76.1	4.6	(D)	(D)	239.0	13.9
333401	Aluminum and aluminum-base alloy refinery shapes.....	do.....	(D)	(D)	37.0	16.6	(D)	(D)	33.3	13.4
	Scrap, excluding home scrap:									
999811	Iron and steel.....	do.....	(D)	(D)	324.5	9.9	(D)	(D)	330.6	13.3
999808	Aluminum and aluminum-base alloy.....	do.....	(D)	(D)	(D)	(D)	(D)	(D)	0.1	0.1
	Castings (rough and semifinished): <sup>4</sup>									
332011	Iron (gray and malleable).....	do.....	504.9	139.3	2,604.5	760.6	3,109.4	899.9	1,295.4	1,745.5
332300	Steel.....	do.....	21.6	14.6	127.7	103.5	149.3	118.1	158.0	127.1
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	55.2	38.9	384.1	191.3	439.3	230.2	430.2	225.3
336200	Copper and copper-base alloy.....	do.....	(D)	(D)	16.2	11.6	(D)	(D)	8.1	5.6
	Forgings: <sup>4</sup>									
339100	Iron and steel.....	1,000 tons.....	84.2	39.3	894.0	398.6	978.2	437.9	999.5	391.0
339200	Aluminum and aluminum-base alloy.....	Million lbs.....	-	-	3.2	1.9	3.2	1.9	1.4	1.0
362115	Fractional horsepower electric motors (under 1 hp.) <sup>4</sup> .....	1,000.....	(D)	(D)	5.8	20.2	(D)	(D)	7.2	21.0
	Bearings:									
356218	Ball.....	do.....	(X)	12.7	(X)	28.9	(X)	41.6	(X)	47.7
356201	Roller.....	do.....	(X)	24.8	(X)	101.7	(X)	126.5	(X)	109.0
229501	Coated, impregnated or laminated fabrics.	Million lin. yds.	4.5	7.3	2.2	2.3	6.7	9.6	18.4	15.6
	Uncoated broad-woven fabrics (piece goods):									
221103	Cotton.....	do.....	(NA)	0.3	(D)	(D)	(D)	(D)	4.9	1.4
220119	Other broad-woven fabrics.....	do.....	(D)	(D)	5.4	1.4	(D)	(D)	13.9	17.4

See footnotes at end of table.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963—Continued

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967						1963	
			Industry 3711.—Motor vehicles		Industry 3714.—Motor vehicle parts and accessories		Total of industries 3711 and 3714		industries 3711 and 3714	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	Materials, parts, containers and supplies--Continued									
307911	Unsupported plastic film and sheeting, excluding packaging materials.....	Million sq. yds..	(NA)	0.5	2.0	1.4	(NA)	1.9	(NA)	(NA)
282130	Thermoplastic resins including modified resins.....	Million lbs.								
	(dry basis).....	(D)	(D)	(D)	49.6	15.4	(D)	(D)	22.1	9.6
282140	Thermosetting resins.....	.....do.....	(D)	(D)	22.0	8.3	(D)	(D)	22.1	9.7
970099	All other materials and components, parts, containers, and supplies consumed	.....	(X)	<sup>5</sup> 16,347.6	(X)	<sup>5</sup> 2,437.0	(X)	18,747.0	(X)	<sup>1</sup> 18,671.9
976000	Materials, parts, containers and supplies, n.s.k. <sup>6</sup> .....	.....	(X)	549.4	(X)	273.9	(X)	823.3	(X)	727.9

- Represents zero. (D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or from related figures. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Data for these materials have been revised to exclude the consumption of materials by automotive stamping plants operated by automobile producing plants. Most of these plants had previously been classified in this industry.

<sup>2</sup>These figures are understated by between \$15 and \$25 million or less because of apparent undercoverage of carbon steel pipe and tube.

<sup>3</sup>Included with material code 970099, "All other materials and components, etc."

<sup>4</sup>No data are available for the quantities of castings, forgings or fractional horsepower electric motors produced and consumed in the same establishment.

<sup>5</sup>Includes cost of those materials for which the symbol "D" appears.

<sup>6</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. There were no such small establishments in industry 3711. In industry 3714, these small establishments accounted for approximately 0.3 percent of payrolls and 0.3 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category and is shown in tables 3 and 4.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

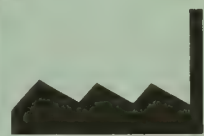
**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# 1967 CENSUS OF MANUFACTURES



MC67(P)-37A-5

## INDUSTRY SERIES

### Truck trailers

SIC Code 3715

**preliminary  
report**

The Truck Trailers (Full) Industry includes establishments primarily engaged in manufacturing truck trailers and truck trailer chassis for sale separately, but not engaged in manufacturing complete trucks and busses.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Truck Trailers Industry amounted to \$717.1 million, an increase of 39 percent compared with 1963. Value added by manufacture at \$269.4 million in 1967 was 31 percent more than value added in 1963. Average employment in the

industry showed an increase of 18 percent from 1963 to a total of 22.9 thousand employees in 1967.

Of the \$717.1 million total value of shipments and other receipts of establishments classified as truck trailers, \$36.4 million were products primary to other industries; and \$32.0 million were receipts for miscellaneous activities. The industry shipments of primary products represented 95 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 92 percent in 1963.

The total value of truck trailers shipped by all producers in 1967 was \$697.0 million of which \$648.7 million, or 93 percent, were shipped by

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3715.--TRUCK TRAILERS														
1967 Census....	175	107	22.9	147.2	18.3	35.6	105.2	269.4	448.4	717.1	22.3	130.4	95	93
1966 ASM <sup>1</sup> .....	(NA)	(NA)	28.1	175.2	22.9	44.9	129.3	314.4	487.9	795.6	25.5	139.7	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	24.1	150.1	19.5	39.6	111.3	268.4	425.6	690.4	7.6	124.6	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	21.8	129.4	17.3	34.4	94.7	231.4	360.1	588.4	13.8	99.2	(NA)	(NA)
1963 Census.....	197	105	19.4	112.9	15.5	30.9	81.7	205.5	309.5	515.7	5.3	82.1	92	93
1962 ASM <sup>1</sup> .....	(NA)	(NA)	20.2	117.3	15.8	31.8	83.0	218.5	325.6	543.8	6.1	89.0	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	17.2	94.3	13.3	26.3	65.8	158.1	247.2	405.7	10.2	87.4	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	18.9	101.6	14.7	29.6	72.7	170.1	267.8	438.5	7.9	78.2	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	20.6	107.1	16.7	35.4	78.0	203.2	305.0	505.4	*10.3	96.2	(NA)	(NA)
1958 Census <sup>2</sup> ...	170	93	15.7	78.1	12.1	24.6	55.4	131.1	206.3	334.7	5.1	80.2	84	93

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

**BUREAU OF THE CENSUS** George Hay Brown, Director

plants classified in industry 3715, Truck Trailers, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was also 93 percent in 1963.

2, and 4 may be compared with the product statistics in table 3.

These ratios were developed to measure the extent to which the industry statistics in tables 1,

For an explanation of the terms used in the tables, see appendix at the end of this report.

#### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3715, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

M37L, Truck Trailers.



TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY-3715.--TRUCK TRAILERS													
United States, total.....	175	107	22.9	147.2	18.3	35.6	105.2	269.4	448.4	717.1	22.3	19.4	205.5
Northeast.....	28	21	5.1	33.4	4.1	7.8	23.5	79.3	110.1	190.2	9.0	4.0	40.3
East North Central....	38	23	6.2	43.0	5.0	9.5	31.8	69.6	123.2	192.9	5.0	6.0	75.2
Indiana.....	8	7	1.7	11.4	1.3	2.7	8.7	18.6	39.0	57.3	0.6	(D)	(D)
West North Central....	21	12	2.7	16.4	2.1	4.1	11.4	30.6	50.0	80.5	5.1	2.2	21.7
South.....	47	29	6.5	36.7	5.2	10.5	26.3	62.2	115.7	177.5	2.5	4.6	39.8
East South Central....	12	8	2.3	13.0	1.8	3.7	9.6	23.6	42.8	66.6	0.6	1.6	14.9
Texas.....	13	9	2.0	11.0	1.6	3.1	7.7	21.0	35.8	57.0	(D)	(D)	(D)
West.....	41	22	2.4	17.7	1.9	3.7	12.2	27.7	49.4	76.0	0.6	2.7	28.5
Washington.....	6	5	0.3	2.2	0.2	0.5	1.5	3.7	4.8	8.7	0.1	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (thousands)	Value (million dollars)	Quantity (thousands)	Value (million dollars)
3715- --	TRUCK TRAILERS, TOTAL.....	(X)	697.0	(X)	484.7
37150 10	Complete truck trailers and chassis as reported in census of manufactures.....	(X)	643.7	(X)	461.4
	Complete truck trailers and chassis as reported on Census form M37L.....	124.0	590.8	82.9	438.5
	Vans, total.....	59.1	318.6	46.6	261.5
	Closed top:				
	Insulated, semi-insulated and refrigerated, total.....	11.4	90.1	8.9	70.4
37150 03	Steel.....			1.1	6.0
37150 13	Aluminum.....	11.4	90.1	7.8	64.4
	Drop-frame type (12 inches or more drop), including furniture drop frame but excluding livestock drop frame, total.....	2.8	16.3	12.5	114.2
37150 05	Steel.....	1.6	9.4	12.1	111.4
37150 15	Aluminum.....	1.2	6.9	10.5	12.9
	Livestock, including livestock drop frame, total.....	1.1	9.1		
37150 07	Steel.....				
37150 17	Aluminum.....	1.1	9.1	(1)	(1)
	All other closed top dry freight vans, total.....	40.6	186.2	31.9	159.9
37150 09	Steel.....			7.9	35.7
37150 19	Aluminum.....	40.6	186.2	24.0	124.2
	Open-top, including low-side grain, fruit, etc., total.....	3.3	16.8	3.3	16.9
37150 12	Steel.....	1.1	5.4	1.1	5.5
37150 21	Aluminum.....	2.2	11.5	2.2	11.5
	Tank, total.....	7.2	73.0	4.6	47.0
	Other than high pressure:				
	For flammable liquids, except casing head transport, including aircraft refuelers:				
37150 22	Steel (MC 300-303 types).....				
37150 23	Aluminum (MC 301-302-305 types).....	2.9	27.9		
	For asphalt:				
37150 24	Steel.....			3.4	33.1
37150 25	Aluminum.....	0.5	4.7		
37150 26	For casing head transport-MC 304 type.....				
37150 27	For chemicals & acids-MC 310-311 types.....				
37150 29	All other, including food and milk, sanitary, and cryogenics.....	3.8	40.4	0.7	8.0
37150 31	High pressure (MC 330-331 types) (LPG, anhydrous ammonia, etc.).....			0.4	5.8
37150 33	Bulk commodity and dry materials, including pneumatic and mechanical discharge (both tank and hopper types), except vans.....	1.1	11.4	1.2	11.3
37150 35	Pole and logging.....	1.3	4.8	1.1	3.9
37150 37	Platform.....	15.5	59.4	12.5	47.8
37150 41	Low-bed heavy haulers (over 10-ton capacity).....	3.4	17.3	3.2	14.6
37150 43	Dump trailers and dump chassis, highway type (rear, side, and bottom dump, including nonpneumatic hoppers).....	2.8	16.3	3.1	17.5
37150 45	Dollies or converter gear.....	3.8	6.6		
37150 49	All other trailers and chassis, except detachable trailers and detachable trailer chassis.....	2.3	9.1	5.3	16.4
37150 53	Detachable trailer bodies, sold separately.....	17.0	52.6		
37150 54	Detachable trailer chassis, sold separately.....	10.5	21.9	5.3	18.4
37150 55	Truck trailers and truck trailer chassis with axles rated less than 10,000 pounds.....	39.0	25.7	7.0	10.5
37150 00	Truck trailers, n.s.k. (Represents establishments with 10 employees or more in 1967. See Note.).....	(X)	25.2		
37150 02	Truck trailers, n.s.k. (Represents establishments with fewer than 10 employees in 1967. See Note.).....	(X)	2.4	(X)	12.8

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>In 1963, livestock type closed vans were not reported separately. They were included as drop-frame type.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3715.--TRUCK TRAILERS					
	Materials, parts, containers, and supplies, total.....		(X)	432.3	(X)	298.5
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 tons.....	21.9	3.8	17.9	3.2
331012	Sheet and strip.....	..do.....	140.1	23.6	106.9	17.1
331013	Plates.....	..do.....	57.5	9.4	42.3	6.2
331015	Structural shapes.....	..do.....	47.6	7.1	42.4	11.1
331017	Wire and wire products.....	..do.....	(NA)	0.3		
331019	All other carbon steel mills shapes and forms.....	..do.....	13.0	4.0		
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	..do.....	10.0	2.5	25.9	9.0
331029	All other alloy steel mill shapes and forms.....	..do.....	23.8	5.4		
331031	Stainless steel.....	..do.....	17.6	14.3		
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction only).....	million lbs.....	(D)	(D)	(NA)	(NA)
335790	Insulated wire and cable.....	million lbs. copper content..	1.0	0.7	0.8	0.4
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	million lbs.....	-	-	0.6	0.3
335123	Plate, sheet, and strip, including military cups and discs...	..do.....	-	-		
335127	Pipe and tube.....	..do.....	(NA)	1.4		
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	..do.....	80.1	34.2	52.5	22.3
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	..do.....	68.1	26.4	54.9	20.0
335209	All other aluminum mill shapes and forms (wire, rolled rod, bar, powder, welded tubing, etc.).....	..do.....	2.3	1.0	0.3	0.2
	Primary metals and scrap:					
331051	Pig iron (excluding silvery iron).....	100 tons.....	-	-	(D)	(D)
333401	Aluminum and aluminum-base alloy refinery shapes.....	..do.....	(D)	(D)	(NA)	(NA)
999811	Iron and steel scrap.....	..do.....	(D)	(D)	(D)	(D)
	Castings (rough and semifinished): <sup>1</sup>					
332011	Iron (gray and malleable).....	..do.....	3.3	2.1	0.7	0.7
332300	Steel.....	..do.....	10.8	4.9	13.3	6.8
336100	Aluminum and aluminum-base alloy.....	million lbs.....	0.9	0.8	0.6	0.4
336200	Copper and copper-base alloy.....	..do.....	(D)	(D)	(NA)	(NA)
	Forgings: <sup>1</sup>					
339100	Iron and steel.....	1,000 tons.....	1.1	0.4	(D)	(D)
339200	Aluminum and aluminum-base alloy.....	million lbs.....	0.4	0.2	0.2	0.1
	Bearings:					
356218	Ball.....		(X)	1.4	(X)	0.3
356201	Roller.....				(X)	1.0
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	261.1	(X)	169.5
976000	Materials, parts, containers and supplies, n.s.k. <sup>2</sup> .....		(X)	27.9	(X)	29.9

(D) Included with material code 970099 "All other materials, etc." to avoid disclosing the operations of individual companies.

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>No data are available on the quantity of castings and forgings produced and consumed in the same establishment.<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3715, these small establishments accounted for less than 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.

# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "allemployee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-37B-1

## INDUSTRY SERIES

### Aircraft

SIC Code 3721

## preliminary report

The Aircraft Industry includes establishments primarily engaged in manufacturing or assembling complete aircraft. This industry also includes establishments primarily engaged in factory type aircraft modification on a contract or fee basis. Establishments primarily engaged in manufacturing engines, propellers, and other aircraft parts and auxiliary equipment are classified in industries 3722, 3723, and 3729.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual. In industry 3721 there is usually a significant difference between value of actual physical shipments and value of work done during a specified

period. This is primarily due to lead time between the input of materials and labor and the shipments of completed aircraft. In evaluating the internal relationships of the Aircraft Industry, such as the ratio of cost of materials or payrolls to output, the value of aircraft shipments for the year is generally not meaningful and value of work done is therefore substituted. This statistic included total costs (materials, labor, overhead, etc.) and reflected the value of work done during the year, including work done on aircraft not accepted during the year, but excluding the value of work done in prior years.

In 1967, the value of work done and miscellaneous receipts of establishments classified in the Aircraft Industry amounted to \$11,073.6

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture <sup>3</sup>	Cost of materials	Value of shipments <sup>3</sup>	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)		
INDUSTRY 3721.--AIRCRAFT														
1967 Census....	123	81	386.9	3,568.1	230.7	489.6	1,807.6	5,443.7	5,629.8	11,073.6	407.1	5,232.9	83	97
1966 ASM <sup>1</sup> .....	(NA)	(NA)	357.2	3,221.8	209.3	435.0	1,527.9	4,674.6	4,326.1	9,000.1	378.4	3,264.1	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	295.1	2,508.4	172.3	351.0	1,169.3	3,730.8	3,420.4	7,150.9	140.5	2,300.8	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	283.5	2,328.7	159.6	327.7	1,220.5	3,416.9	3,121.6	6,584.3	102.9	2,333.3	(NA)	(NA)
1963 Census.....	100	65	302.2	2,369.4	166.7	342.1	1,097.1	3,542.7	2,773.8	6,316.5	114.7	2,437.7	69	96
1962 ASM <sup>1</sup> .....	(NA)	(NA)	326.1	2,468.7	180.4	378.2	1,131.4	3,363.5	2,842.3	6,205.6	119.7	2,147.0	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	305.4	2,205.5	172.9	351.7	1,023.5	3,046.9	2,953.3	6,000.1	71.8	1,950.6	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	302.4	2,084.9	177.6	366.4	1,043.9	3,044.7	2,874.2	5,920.2	62.8	2,007.7	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	369.3	2,419.6	225.6	461.8	1,248.2	3,305.0	3,503.7	6,808.7	89.7	2,425.6	(NA)	(NA)
1958 Census <sup>2</sup> ...	127	82	377.4	2,340.3	251.2	508.2	1,334.7	3,399.2	3,038.9	6,438.1	94.2	2,476.9	81	93

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

<sup>3</sup>Establishments in this industry reported value of work done rather than value of shipments. Consequently the formula for computing value added by manufacture was not adjusted for inventory change between the beginning and end of the year. It does include value added by resale.

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For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

Harold C. Passer, Assistant Secretary for Economic Affairs

BUREAU OF THE CENSUS George Hay Brown, Director

million, an increase of 75 percent compared with 1963. Value added by manufacture at \$5,443.7 million in 1967 was 54 percent more than value added in 1963. Average employment in the industry showed an increase of 28 percent from 1963 to a total of 386.9 thousand employees in 1967.

Of the \$11,073.6 million total value of work done and other receipts of establishments classified as aircraft, \$1,882.7 million were products primary to other industries; and \$279.7 million were receipts for miscellaneous activities. The industry shipments (work done) of primary products represented 83 percent of the total manufactured product shipments (work done) primary and secondary. This percent, called the specialization ratio for the industry, was 69 percent in 1963.

The total value of aircraft shipped (work done) by all producers in 1967 was \$9,152.9 million of which \$8,911.2 million, or 97 percent, were shipped by plants classified in industry 3721, Aircraft, while the remainder was shipped by plants classified in other industries. The percent, called the coverage ratio, was 96 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3721, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

M37G, Complete Aircraft.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture <sup>1</sup>	Cost of materials	Value of shipments <sup>1</sup>	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
INDUSTRY 3721.--AIRCRAFT													
United States, total.....	123	81	386.9	3,568.1	230.7	489.6	1,807.6	5,443.7	5,629.8	11,073.6	407.1	302.2	3,542.7
Northeast.....	16	13	59.6	560.7	32.7	67.4	261.9	1,075.2	649.2	1,724.4	62.2	59.6	709.1
North Central.....	24	17	68.1	579.4	44.4	94.5	322.2	811.0	953.2	1,764.2	23.8	50.5	519.9
South.....	42	29	91.9	830.6	58.8	126.5	448.3	1,329.9	1,693.4	3,023.3	90.5	59.6	572.5
West.....	41	22	167.4	1,597.4	94.9	201.3	775.2	2,227.7	2,334.1	4,561.7	230.5	132.5	1,741.2

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

<sup>1</sup>See footnote 1, table 1.

TABLE 3. Value of Work Done by All Producers: 1967 and 1963

(Includes value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Value of work done (million dollars)	
		1967	1963
3721- --	AIRCRAFT, TOTAL <sup>1</sup> .....	9,152.9	4,330.5
37211 --	Value of work done on aircraft, military type, for U.S. military customers, excluding modifications, conversions, and other aeronautical services.....	4,407.9	2,470.3
37211 21	Fixed wing aircraft.....	(X)	2,470.3
37211 23	Helicopters, autogyros, and other VTOL vehicles.....		
37211 25	Balloons, gliders, and other aircraft, n.e.c.....		
37212 00	Personal and utility type aircraft other than for U.S. military customers.....	3,504.8	157.8
37213 00	Commercial transport type aircraft, other than for U.S. military customers.....		561.1
37214 --	Modifications, conversions, and overhaul of previously accepted aircraft.....	584.4	465.5
37214 11	For U.S. military customers.....	504.8	430.9
37214 51	For other than U.S. military customers.....	79.6	34.6
37216 --	Other aeronautical services on aircraft.....	631.6	668.4
	For U.S. military customers:		
37216 13	Research and development on complete military aircraft.....	303.8	620.7
37216 15	All other aeronautical services on complete military aircraft.....	209.0	
	For other than U.S. military customers:		
37216 53	Research and development on complete nonmilitary aircraft.....	118.8	47.7
37216 55	All other aeronautical services on complete nonmilitary aircraft.....		
37210 00	Aircraft, n.s.k. (Represents principally establishments with 10 or more employees in 1967. See Note.).....	23.2	7.5
37210 02	Aircraft, n.s.k. (Represents principally establishments with fewer than 10 employees in 1967. See Note.).....	1.0	

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Data represents receipts, billings on value of work done, including modifications, conversions, and overhaul of previously accepted aircraft, and other aeronautical services (including research and development on aircraft.)



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3721.--AIRCRAFT					
	Materials, components, parts, containers, and supplies, total.....		(X)	5,179.1	(X)	2,458.7
	Mill shapes and forms:					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	29.5	7.4	3.9	1.9
331012	Sheet and strip.....	..do.....	11.4	2.2	8.6	3.7
331013	Plates.....	..do.....	3.5	0.9	3.1	0.7
331015	Structural shapes.....	..do.....	2.4	0.7	3.4	1.1
331017	Wire and wire products.....	..do.....			1.6	0.8
331019	All other carbon steel mill shapes and forms.....	..do.....	2.9	1.4	2.2	1.8
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	..do.....	7.1	3.8	5.1	4.2
331029	All other alloy steel mill shapes and forms.....	..do.....	6.5	4.0	2.9	2.7
331031	Stainless steel.....	..do.....	4.5	7.7	2.2	5.2
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction only).....	Million lbs.....	0.4	0.4	0.6	0.9
335790	Insulated wire and cable.....	Million lbs. (copper content)	7.8	14.6	3.4	4.5
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	0.4	0.9	0.2	0.4
335123	Plate, sheet, and strip, including military cups and discs..	..do.....			0.4	0.6
335127	Pipe and tube.....	..do.....	1.3	0.7	0.2	0.3
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	..do.....	109.1	82.9	51.6	38.1
335205	Extruded shapes (including extruded rod, bar, pipe, tube, etc.).....	..do.....	37.0	47.1	16.7	21.2
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welding tubing, etc.).....	..do.....	9.1	11.2	8.1	4.8
335601	Titanium and titanium-base alloy.....	..do.....	2.2	18.4	1.1	15.2
	Castings (rough and semifinished): <sup>1</sup>					
332300	Steel.....	1,000 short tons.	3.0	5.0	3.2	5.6
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	9.8	21.0	5.4	8.5
336200	Copper and copper-base alloy.....	..do.....	0.1	0.2	(NA)	0.5
	Forgings: <sup>1</sup>					
339100	Iron and steel.....	1,000 short tons.	3.8	10.1	4.2	6.3
339200	Aluminum and aluminum-base alloy.....	Million lbs.....	10.5	17.1	9.8	14.6
339201	Titanium and titanium-base alloy.....	..do.....	1.3	16.7	0.1	0.7
	Electric motors and generators: <sup>1</sup>					
	Fractional horsepower electric motors (under 1 hp.):					
362110	Timing motors, synchronous and subsynchronous.....	1,000.....	5.8	0.6	3.3	0.4
363115	Other fractional horsepower electric motors (excluding timing motors).....	..do.....	8.6	0.8	7.5	0.5
362120	Integral horsepower motors and generators (1 hp. and over)....	..do.....	13.3	1.8	0.7	0.4
	Bearings:					
356218	Ball.....		(X)	2.7	(X)	3.2
356201	Roller.....		(X)	3.2	(X)	2.0
356120	Hydraulic fluid power pumps, motors, and related hydraulic equipment.....		(X)	25.2	(X)	25.5
220123	Broad woven fabrics (cotton, wool, manmade fiber fabrics, etc)..	Million lin. yds.	5.5	19.3	1.5	4.2
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	4,790.7	(X)	2,233.8
976000	Materials, components, parts, containers, and supplies consumed, n.s.k. <sup>2</sup> .....		(X)	60.4	(X)	44.4

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>No data are available for the quantities of castings, forgings, or electric motors and generators produced and consumed in the same establishment.<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3721, these small establishments accounted for a minute share of payrolls and value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category and is shown in tables 3 and 4.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

### Aircraft engines and engine parts

**preliminary  
report**

SIC Code 3722

The Aircraft Engines and Engine Parts Industry includes establishments primarily engaged in manufacturing aircraft engines and engine parts.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Aircraft Engines and Engine Parts Industry amounted to \$5,247.8 million, an increase of 30 percent compared with 1963. Value added by manufacture at \$2,888.5 million in 1967 was 31 percent more than value added in 1963. Average

employment in the industry showed an increase of 3 percent from 1963 to a total of 193.4 thousand employees in 1967.

Of the \$5,247.8 million total value of shipments and other receipts of establishments classified as aircraft engines and engine parts, \$567 million were products primary to other industries; and \$227 million were receipts for miscellaneous activities. The industry shipments of primary products represented 88 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 87 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
INDUSTRY 3722. --AIRCRAFT ENGINES AND ENGINE PARTS														
1967 Census....	256	203	193.4	1,761.6	111.9	244.0	870.3	2,888.5	2,377.7	5,247.8	224.2	1,052.7	88	93
1966 ASM <sup>1</sup> F....	(NA)	(NA)	182.5	1,623.0	104.9	233.2	800.9	2,657.7	1,973.7	4,424.6	194.9	1,049.0	(NA)	(NA)
1965 ASM <sup>1</sup> F....	(NA)	(NA)	172.3	1,446.4	94.6	201.1	669.6	2,323.9	1,696.5	3,931.1	105.4	725.2	(NA)	(NA)
1964 ASM <sup>1</sup> F....	(NA)	(NA)	170.5	1,392.2	88.7	189.1	612.8	2,175.2	1,625.1	3,751.9	96.0	636.1	(NA)	(NA)
1963 Census <sup>2</sup> ....	231	171	188.1	1,460.7	103.5	216.8	682.5	2,208.3	1,837.3	4,024.9	111.5	598.6	87	93
1962 ASM <sup>1</sup> .....	(NA)	(NA)	178.6	1,331.1	103.0	216.0	646.0	1,984.0	1,686.6	3,660.5	78.5	591.3	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	162.9	1,162.6	94.1	197.6	571.3	1,759.3	1,507.0	3,242.4	54.4	580.8	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	165.8	1,144.8	94.6	197.3	556.6	1,633.0	1,473.2	3,094.9	46.7	563.5	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	171.8	1,258.5	202.2	212.9	581.9	1,813.7	1,676.6	3,507.1	64.1	524.4	(NA)	(NA)
1958 Census <sup>2</sup> ....	223	175	159.1	999.2	94.5	194.9	509.7	1,615.7	1,719.1	3,512.1	55.9	570.8	94	93

(NA) Not available. <sup>2</sup>Revised.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued January 1970

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**



The total value of aircraft engines and engine parts shipped by all producers in 1967 was \$4,812.4 million of which \$4,454.0 million, or 93 percent, were shipped by plants classified in industry 3722, Aircraft Engines and Engine Parts, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was also 93 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3722, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

M37G, Complete Aircraft and Aircraft Engines.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
INDUSTRY 3722.--AIRCRAFT ENGINES AND ENGINE PARTS													
United States, total.....	256	203	193.4	1,761.6	111.9	244.0	870.3	2,888.5	2,377.7	5,247.8	224.2	r188.1	r2,208.2
Northeast.....	104	86	99.7	860.4	63.4	142.4	487.5	1,448.4	1,370.2	2,825.0	121.8	(D)	(D)
North Central.....	74	63	54.2	496.4	32.8	68.0	258.1	732.5	704.7	1,456.0	73.1	(D)	(D)
Illinois.....	11	9	2.8	25.1	2.1	4.5	16.7	44.4	19.9	65.8	1.7	(D)	(D)
Michigan.....	20	15	4.0	30.1	2.8	5.5	18.1	46.1	22.1	67.9	3.2	(D)	(D)
South.....	26	19	8.7	77.9	4.5	9.4	32.7	106.6	58.1	153.3	5.3	(D)	(D)
West.....	52	35	30.8	326.9	11.2	24.2	92.0	600.9	244.7	813.5	24.1	(D)	(D)
Arizona.....	5	3	0.2	1.9	0.2	0.4	1.4	2.9	1.9	4.8	0.2	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

<sup>r</sup> Revised.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000 units)	Value (million dollars)	Quantity (1,000 units)	Value (million dollars)
3722- --	AIRCRAFT ENGINES AND ENGINE PARTS, TOTAL.....	(X)	4,812.4	(X)	<sup>F</sup> 3,534.1
37221 --	Aircraft engines for U.S. military customers.....	(X)	1,086.6	(X)	644.4
37221 11	Reciprocating.....	(X)	1,086.6	(X)	644.4
37221 14	Turbo-jet and turbo-ban.....				
37221 17	Turbo-prop and turbo-shaft.....				
37221 39	Other, including JATO bottles and liquid power plants (excluding all missile engines).....				
37222 00	Aircraft engines for other than U.S. military customers: As reported in the census of manufactures.....	(NA)	690.7	11.9	150.0
	As reported on Census monthly Form M37C.....	(NA)	652.0	(NA)	144.3
37223 --	Aeronautical services on aircraft engines.....	(X)	564.0	(X)	385.4
	Research and development work on aircraft engines (including receipts for work done for affiliates and other establishments):				
37223 21	For U.S. military customers.....	(X)	430.5	(X)	326.8
37223 23	For other than U.S. military customers.....	(X)	( <sup>1</sup> )	(X)	( <sup>1</sup> )
	All other aeronautical services on aircraft engines:				
37223 31	For U.S. military customers.....	(X)	36.3	(X)	37.4
37223 33	For other than U.S. military customers.....	(X)	<sup>1</sup> 94.8	(X)	<sup>1</sup> 21.2
37223 00	Aeronautical services on aircraft engines, n.s.k.....	(X)	2.4	(X)	-
37224 --	Aircraft engine parts and accessories.....	(X)	1,422.9	(X)	932.1
37224 13	For U.S. military customers.....	(X)	907.1	(X)	668.8
37224 53	For other than U.S. military customers.....	(X)	503.3	(X)	262.9
37224 00	Aircraft engine parts and accessories, n.s.k.....	(X)	12.5	(X)	0.3
37225 --	Complete missile or space vehicle engines and/or propulsion units.....	(X)	451.7	(X)	<sup>F</sup> 507.0
37225 11	For U.S. Government military customers.....	(X)	304.2	(X)	457.9
37225 13	For U.S. Government nonmilitary customers.....	(X)	147.5	(X)	<sup>F</sup> 49.1
37226 --	Research and development on complete missile or space vehicle engines and/or propulsion units.....	(X)	389.1	(X)	696.8
37226 11	For U.S. Government military customers.....	(X)	261.3	(X)	475.5
37226 13	For U.S. Government nonmilitary customers.....	(X)	127.8	(X)	221.2
37227 --	All other services on complete missile or space vehicle engines and/or propulsion units.....	(X)	88.4	(X)	61.7
37227 11	For U.S. Government military customers.....	(X)	88.4	(X)	54.3
37227 13	For U.S. Government nonmilitary customers.....	(X)		(X)	7.4
37228 --	Missile and space vehicle engine and/or propulsion unit parts and accessories.....	(X)	93.9	(X)	147.8
37228 11	For U.S. Government military customers.....	(X)	51.2	(X)	75.1
37228 13	For U.S. Government nonmilitary customers.....	(X)	40.6	(X)	72.7
37228 00	Missile and space vehicle engine and/or propulsion unit parts and accessories, n.s.k.....	(X)	2.1	(X)	-
37220 00	Aircraft engines and engine parts, n.s.k. (Represents principally establishments with 10 employees or more in 1967. See Note.).....	(X)	23.9	(X)	8.9
37220 02	Aircraft engines and engine parts, n.s.k. (Represents principally establishments with fewer than 10 employees in 1967. See Note.).....	(X)	1.2		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

- Represents zero. (NA) Not available. n.s.k. Not specified by kind. <sup>F</sup>Revised. (X) Not applicable.

<sup>1</sup>For 1963 and 1967, data on research and development on aircraft engines for other than United States military customers are included with "All other aeronautical services on aircraft engines for other than United States military customers" to avoid disclosing figures of individual companies.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3722.--AIRCRAFT ENGINES AND PARTS					
	Materials, components, parts, containers and supplies, total.....		(X)	1,928.5	(X)	1,346.9
	Mill shapes and forms, except castings:					
	Carbon steel:					
331012	Bars and bar shapes.....	1,000 short tons	11.1	2.4	10.0	2.3
331012	Sheet and strip.....	..do.....	8.3	2.4	9.6	3.0
331013	Plates.....	..do.....	8.4	1.7	5.7	1.4
331015	Structural shapes.....	..do.....	0.7	0.3	0.3	0.1
331017	Wire and wire products.....	..do.....	0.9	0.7	0.2	0.1
331019	All other carbon steel mill shapes and forms.....	..do.....	9.5	3.1	2.9	1.0
	Alloy steel, except stainless:					
331021	Bars and bar shapes.....	..do.....	20.0	16.7	18.7	13.4
331029	All other alloy steel mill shapes and forms.....	..do.....	11.3	14.5	4.6	7.5
331031	Stainless steel.....	..do.....	15.6	39.0	17.1	41.0
	Copper and copper-base alloy:					
	Bare wire (for electrical conduction only).....	Million pounds..	0.1	0.1	(Z)	(Z)
335790	Insulated wire and cable.....	Million pounds (copper content).....	0.7	0.9	0.5	0.5
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million.....	2.3	1.6	1.7	1.1
335123	Plate, sheet, and strip, including military cups and discs..	..do.....	0.4	0.4	0.1	0.1
335127	Pipe and tube.....	..do.....	0.1	0.1	(Z)	(Z)
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	..do.....	6.2	5.5	3.8	3.1
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	..do.....	2.5	3.4	2.1	1.6
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	..do.....	(NA)	2.6	2.4	2.8
335601	Titanium and titanium-base alloy.....	..do.....	2.7	13.2	1.0	5.2
	Castings, rough and semifinished <sup>1</sup> :					
332300	Steel.....	1,000 short tons	(NA)	51.1	7.4	24.9
336100	Aluminum and aluminum-base alloy.....	Million pounds..	17.7	41.3	14.3	26.7
336200	Copper and copper-base alloy.....	..do.....	0.4	0.4	0.3	0.3
	Forgings <sup>1</sup> :					
339100	Iron and steel.....	1,000 short tons	49.9	83.7	37.8	65.7
339200	Aluminum and aluminum-base alloy.....	Million pounds..	14.1	18.0	18.7	20.8
339201	Titanium and titanium-base alloy.....	..do.....	11.6	54.7	4.5	23.3
	Electric motors and generators <sup>1</sup> :					
	Fractional horsepower electric motors (under 1 hp.):					
362110	Timing motors, synchronous and subsynchronous.....	1,000.....	45.8	1.5	(D)	(D)
362115	Other fractional horsepower electric motors, excluding timing motors.....	..do.....	(D)	(D)	32.2	3.2
362120	Integral horsepower motors and generators (1 hp. and over)....	..do.....	0.4	0.2	0.7	0.2
	Bearings:					
356218	Ball.....	..do.....	(X)	9.1	(X)	8.8
356201	Roller.....	..do.....	(X)	5.3	(X)	8.5
356120	Hydraulic fluid powerpumps, motors, and related hydraulic equipment.....	..do.....	(X)	(D)	(X)	2.1
220123	Broadwoven fabrics (cotton, wool, manmade fiber fabrics, etc.)..	Mill. lin. yds..	0.1	0.1	(NA)	(NA)
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	1,505.9	(X)	1,017.4
976000	Materials components, parts, containers, supplies consumed <sup>2</sup> .....		(X)	48.6	(X)	61.2

(D) Included with material code 970099 "All other materials etc.," to avoid disclosing operation of individual company.

(NA) Not available.

<sup>1</sup>Revised. (X) Not applicable. (Z) Less than 0.1 when rounded.<sup>1</sup>No data are available for the quantities of castings, forgings, or electric motors and generators produced and consumed in the same establishment.<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3722, these small establishments accounted for a minute portion of payrolls and value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products**--In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture**--This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment**--For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories**--Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

**U.S. DEPARTMENT OF COMMERCE**  
**Bureau of the Census**  
Washington, D.C. 20233

POSTAGE AND FEES PAID  
U.S. DEPARTMENT OF COMMERCE

OFFICIAL BUSINESS



# 1967 CENSUS OF MANUFACTURES



MC67(P)-37B-3

## INDUSTRY SERIES

**preliminary  
report**

### Aircraft equipment, n.e.c.

SIC Code 3729

The Aircraft Equipment, N.E.C., Industry includes establishments primarily engaged in manufacturing aircraft parts and auxiliary equipment, including propellers and propeller parts not elsewhere classified. Establishments primarily engaged in manufacturing or assembling complete aircraft are classified in industry 3721, aircraft engines and parts in industry 3722, aeronautical instruments in industry 3811, and aeronautical electrical equipment in industry 3694.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual. An exception is made in this report in that SIC 3723 and SIC 3729 have been combined.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Aircraft Equipment, N.E.C., Industry amounted to \$4,489.1 million, an increase of 34 percent compared with 1963. Value added by manufacture at \$2,820.5 million in 1967 was 36 percent more than value added in 1963. Average employment in the industry showed an increase of 13 percent from 1963 to a total of 210.9 thousand employees in 1967.

Of the \$4,489.1 million total value of shipments and other receipts of establishments classified as aircraft equipment, n.e.c., \$897.9 million were products primary to other industries; and \$154.0 million were receipts for miscellaneous activities.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3729.--AIRCRAFT EQUIPMENT, N.E.C.														
1967 Census....	886	541	210.9	1,762.6	139.9	298.7	1,049.7	2,820.5	1,699.3	4,489.1	154.6	948.7	79	63
1966 ASM <sup>1</sup> .....	(NA)	(NA)	199.9	1,649.9	136.8	294.3	1,000.2	2,591.8	1,613.6	3,992.3	110.9	909.5	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	168.9	1,383.5	107.6	228.6	769.8	2,138.5	1,190.7	3,233.6	65.6	652.9	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	179.5	1,420.9	109.9	235.1	759.1	2,061.8	1,167.0	3,223.3	64.4	571.8	(NA)	(NA)
1963 Census....	1,014	478	186.4	1,398.2	117.6	246.3	783.2	2,080.3	1,237.3	3,359.4	67.9	558.3	73	60
1962 ASM <sup>1</sup> .....	(NA)	(NA)	210.5	1,534.3	118.2	247.1	752.8	2,119.1	1,786.5	3,857.2	93.3	573.4	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	220.8	1,546.2	128.8	272.5	788.6	2,150.4	2,023.6	4,131.2	100.2	579.1	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	210.5	1,386.5	137.0	289.7	798.7	1,901.1	1,493.2	3,345.2	69.7	640.3	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	211.7	1,357.7	141.9	301.5	800.5	1,841.8	1,401.4	3,204.4	(S)	646.4	(NA)	(NA)
1958 Census <sup>2</sup> ...	1,219	518	229.0	1,380.5	153.7	316.1	831.4	1,909.5	1,261.6	3,266.4	56.1	657.0	83	64

(NA) Not available. n.e.c. Not elsewhere classified.

(S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director

The industry shipments of primary products represented 79 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 73 percent in 1963.

The total value of aircraft equipment, n.e.c., shipped by all producers in 1967 was \$5,489.6 million of which \$3,437.2 or 63 percent, were shipped by plants classified in industry 3729, Aircraft Equipment, N.E.C., while the remainder

was shipped by plants classified in other industries. This percent, called the coverage ratio, was 60 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3729, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-37E, Complete Aircraft Propellers.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3729.--AIRCRAFT EQUIPMENT, N.E.C.													
United States total.....	886	541	210.9	1,762.6	139.9	298.7	1,049.7	2,820.5	1,699.3	4,489.1	154.6	175.2	1,966.9
New England:													
Massachusetts.....	10	5	0.7	5.2	0.5	1.1	3.6	6.6	1.7	8.8	(D)	(D)	(D)
Middle Atlantic.....	137	85	28.8	266.4	15.1	33.2	109.5	455.9	254.7	709.1	(D)	24.9	264.4
North Central:													
Ohio.....	53	33	19.1	166.2	13.0	28.2	97.6	270.5	197.6	463.2	9.9	(D)	(D)
Michigan.....	44	26	7.5	61.4	4.3	9.5	33.0	107.5	71.0	174.5	4.5	5.4	58.7
Missouri.....	18	14	1.9	12.2	1.3	2.8	7.9	26.6	12.2	37.1	1.0	1.2	9.3
South:													
Florida.....	20	10	0.9	9.3	0.7	1.5	4.5	12.6	5.7	18.3	1.0	1.1	10.7
Texas.....	38	26	5.0	33.6	4.2	8.8	23.3	67.5	38.5	104.8	4.4	(D)	(D)
Pacific:													
Washington.....	28	17	3.7	27.1	2.4	4.9	18.0	61.0	56.7	109.6	5.6	(D)	(D)
California.....	362	212	60.5	512.2	45.5	97.8	355.1	761.4	525.3	1,281.8	(D)	41.6	501.1

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

n.e.c. Not elsewhere classified.

<sup>1</sup>The 1963 data exclude establishments which were classified in industry 3723. The total employment and adjusted value added for 1963 were respectively 11.2 thousand and \$113.4 million.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers (million dollars)	
		1967	1963
3729- --	AIRCRAFT PARTS AND AUXILIARY EQUIPMENT, N.E.C., TOTAL.....	5,489.6	3,901.0
37291 --	Aircraft parts and auxiliary equipment.....	4,023.4	2,215.3
	Aircraft and related engines and power take-off gears:		
37291 13	For United States military customers.....	756.2	171.4
37291 15	For other than United States military customers.....	443.1	74.0
	Other aircraft subassemblies and parts:		
37291 95	For United States military customers.....	1,743.1	1,454.7
37291 97	For other than United States military customers.....	995.6	460.1
37291 00	Aircraft parts and auxiliary equipment, n.s.k.....	85.4	55.1
37292 --	Guided missile components and subassemblies, n.e.c.:		
	For United States Government military customers:		
37292 11	Airframes.....	695.3	1,009.2
37292 13	Space capsules.....	203.5	87.5
37292 19	All other.....	24.3	32.3
	For United States Government nonmilitary customers.....	296.4	740.0
37292 21	Airframes.....	17.4	15.9
37292 23	Space capsules.....		
37292 29	All other.....	80.8	68.7
	For nongovernment customers:		
37292 31	Airframes.....		
37292 33	Space capsules.....	36.1	10.9
37292 39	All other.....		28.9
37292 00	Guided missile components and subassemblies, n.s.k.....	36.8	25.0
37293 --	Receipts from research and development on aircraft parts <sup>1</sup> .....	81.1	74.6
	For United States military customers:		
37293 13	For United States military customers.....	81.1	74.6
37293 15	For other than United States military customers.....		
37294 --	Receipts from research and development on missile components, n.e.c. <sup>1</sup> .....	404.1	420.4
	For United States Government military customers:		
37294 11	Airframes.....	13.0	173.5
37294 13	Space capsules.....		
37294 19	All other.....	289.4	148.1
	For United States Government nonmilitary customers:		
37294 21	Airframes.....	75.4	26.7
37294 23	Space capsules.....		
37294 29	All other.....		44.1
	For nongovernment customers:		
37294 31	Airframes.....	0.1	
37294 33	Space capsules.....	-	13.1
37294 39	All other.....	13.9	11.9
37294 00	Receipts from research and development on missile components, n.e.c., n.s.k.....	12.3	3.0

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity	Value (\$1,000)	Quantity	Value (\$1,000)
37295 --	Aircraft propellers and propeller parts, Total <sup>2</sup> .....	(X)	121.8	(X)	109.0
	Complete aircraft propellers and propeller parts:				
37295 10,	As reported in the census of manufactures.....	(X)	81.1	(X)	98.1
51	As reported on Census Annual Form MA-37E.....	(X)	75.8	(X)	89.1
	For military aircraft, total.....	(X)	52.7	(X)	76.4
	Propellers.....	(D)	(D)	(D)	(D)
	Parts.....	(D)	(D)	(D)	(D)
	For civilian aircraft, total.....	(X)	23.0	(X)	12.7
	Propellers.....	24.7	14.5	13.3	6.1
	Parts.....	(X)	8.6	(X)	6.6
37295 31	Propeller blades.....	27.4	40.7	9.7	10.9
37290 00	Aircraft parts and auxiliary equipment, n.e.c., n.s.k. (Represents establishments with 10 employees or more in 1967. See Note.).....	154.5	154.5	(X)	72.5
37290 02	Aircraft parts and auxiliary equipment, n.e.c., n.s.k. (Represents establishments with fewer than 10 employees in 1967. See Note.).....	9.4	9.4		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

- Represents zero. (D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or from related figures. n.e.c. Not elsewhere classified.  
n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Represents receipts or billings.

<sup>2</sup>Those products were previously identified as product class 37230.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3729.--AIRCRAFT EQUIPMENT, N.E.C.					
	Materials, components, parts, containers, and supplies, total		(X)	1,264.0	(X)	1,055.5
	Mill shapes and forms, except castings:					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons..	21.3	5.0	10.5	3.4
331012	Sheet and strip.....	..do.....	25.7	5.6	20.9	4.0
331013	Plates.....	..do.....	12.6	1.6	14.4	2.6
331015	Structural shapes.....	..do.....	3.6	0.6	3.4	0.9
331017	Wire and wire products.....	..do.....	3.8	0.9	1.8	0.4
331019	All other carbon steel mill shapes and forms.....	..do.....	3.1	0.7	3.3	1.2
	Alloy steel, except stainless:					
331021	Bars and bar shapes.....	..do.....	16.6	8.9	9.9	5.6
331029	All other alloy steel mill shapes and forms.....	..do.....	10.7	6.9	3.9	3.2
331031	Stainless steel.....	..do.....	16.2	31.0	9.3	15.9
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction only).....	Million pounds....	(D)	(D)	0.3	0.2
335790	Insulated wire and cable.....	Million pounds copper content...	(D)	(D)	0.8	2.0
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million pounds....	7.0	4.3	3.1	1.4
335123	Plate, sheet, and strip, including military cups and discs...	..do.....	1.3	0.6	0.2	0.2
335127	Pipe and tube.....	..do.....	4.3	2.9	0.2	0.2
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	..do.....	84.0	53.0	36.4	25.5
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	..do.....	38.4	37.7	29.4	30.1
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	..do.....	9.1	8.2	16.3	9.0
335601	Titanium and titanium-base alloy.....	1,000 pounds.....	1.7	14.8	0.5	6.3
	Castings, rough and semifinished:					
332300	Steel <sup>1</sup> .....	1,000 short tons..	14.5	27.2	7.4	9.1
336100	Aluminum and aluminum-base alloy.....	Million pounds....	17.3	23.6	12.6	14.8
336200	Copper and copper-base alloy.....	..do.....	3.5	3.4	0.7	0.4
	Forgings: <sup>1</sup>					
339100	Iron and steel.....	1,000 short tons..	(NA)	46.8	20.1	23.2
339200	Aluminum and aluminum-base alloy.....	Million pounds....	18.6	25.3	10.8	11.7
339201	Titanium and titanium-base alloy.....	1,000 pounds.....	0.6	2.3	(NA)	(NA)
	Electric motors and generators: <sup>1</sup>					
	Fractional horsepower electric motors (under 1 hp.):					
362110	Timing motors, synchronous and subsynchronous.....	1,000.....	(D)	(D)	(Z)	1.2
362115	Other fractional horsepower electric motors, excluding timing motors.....	..do.....	(D)	(D)	0.1	1.9
362120	Integral horsepower motors and generators (1 hp. and over).....	..do.....	(D)	(D)	(Z)	5.8
	Bearings:					
356218	Ball.....		(X)	15.2	(X)	8.2
356201	Roller.....		(X)	8.6	(X)	2.1
356120	Hydraulic fluid power pumps, motors, and related hydraulic equipment.....		(D)	(D)	(X)	21.8
220123	Broadwoven fabrics (cotton, wool, manmade fiber fabrics, etc.)...	Million lin. yds..	1.2	2.1	1.3	2.4
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	808.9	(X)	792.0
976000	Materials, components, parts, containers, and supplies consumed <sup>2</sup> .....		(X)	117.8	(X)	48.8

(D) Included with 970099 "All other materials, etc." to avoid disclosing operations of individual companies. (NA) Not available.

n.e.c. Not elsewhere classified. (X) Not applicable. (Z) Less than 0.1 when rounded.

<sup>1</sup>No data are available on the quantities of castings, forgings or electric motors and generators produced and consumed in the same establishment.<sup>2</sup>Some of the small establishments in this industry may have been misclassified as to industry. This does not significantly affect the statistics other than the number of establishments. (See section of text on scope and coverage for further explanation.)



## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3729, these small establishments accounted for less than 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.

# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

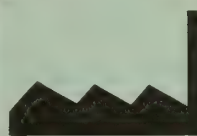
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-37C-1

## INDUSTRY SERIES

**preliminary  
report**

### Ship building and repairing

SIC Code 3731

The Ship Building and Repairing Industry includes establishments primarily engaged in building and repairing all types of ships, barges, and lighters, whether propelled by sail or motor power or towed by other craft. This industry also includes the conversion and alteration of ships. Establishments primarily engaged in fabricating structural assemblies or components for ships or subcontractors engaged in ship painting, joinery, carpentry work, electrical wiring installation, etc., are not classified in this industry.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of work done and miscellaneous receipts of establishments classified in the Ship Building and Repairing Industry amounted to \$2,494.4 million, an increase of 48 percent compared with 1963. Value added by manufacture at \$1,417.0 million in 1967 was 40 percent more than value added in 1963. Average employment in the industry showed an increase of 20 percent from 1963 to a total of 137.4 thousand employees in 1967.

Of the \$2,494.4 million total value of work done and other receipts of establishments classified as ship building and repairing, \$113.0 million were products primary to other industries; and \$78.3 million were receipts for miscellaneous

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture <sup>2</sup>	Cost of materials	Value of work done <sup>1</sup>	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)
INDUSTRY 3731.--SHIP BUILDING AND REPAIRING														
1967 Census....	413	252	137.4	1,063.8	113.0	228.6	809.4	1,417.0	1,077.3	2,494.4	68.3	872.1	95	98
1966 ASM <sup>3</sup> .....	(NA)	(NA)	135.3	1,058.2	114.3	236.8	819.1	1,362.0	984.1	2,338.9	52.8	658.8	(NA)	(NA)
1965 ASM <sup>2</sup> .....	(NA)	(NA)	130.4	946.0	109.5	223.0	737.9	1,204.1	869.9	2,078.2	44.6	567.6	(NA)	(NA)
1964 ASM <sup>2</sup> .....	(NA)	(NA)	115.1	819.9	97.1	197.0	632.5	1,057.7	768.4	1,826.4	32.8	457.7	(NA)	(NA)
1963 Census....	334	200	114.6	782.3	96.5	193.5	610.2	1,009.7	670.1	1,679.8	24.5	344.1	92	99
1962 ASM <sup>2</sup> .....	(NA)	(NA)	111.6	732.7	94.1	186.2	577.4	953.9	716.3	1,670.2	23.0	400.9	(NA)	(NA)
1961 ASM <sup>2</sup> .....	(NA)	(NA)	114.2	728.7	95.7	187.6	569.2	919.7	701.2	1,621.2	31.6	389.9	(NA)	(NA)
1960 ASM <sup>2</sup> .....	(NA)	(NA)	107.7	670.5	90.1	179.7	521.6	860.0	600.6	1,460.7	28.9	401.2	(NA)	(NA)
1959 ASM <sup>2</sup> .....	(NA)	(NA)	116.3	673.2	96.3	186.1	519.4	951.9	614.1	1,566.1	33.8	379.3	(NA)	(NA)
1958 Census <sup>3</sup> ...	319	222	119.1	669.8	101.2	197.7	537.8	913.7	711.9	1,625.6	38.7	408.0	93	99

(NA) Not available.

<sup>1</sup>Establishments in this industry reported value of work done rather than value of shipments. Consequently, the formula for computing value added by manufacture was not adjusted for inventory change between the beginning and end of the year. It does include value added by resale.

<sup>2</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>3</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

**BUREAU OF THE CENSUS** George Hay Brown, Director

activities. The industry shipments of primary products represented 95 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 92 percent in 1963.

The total value of work done on ship building and repairing by all producers in 1967 was \$2,350.1 million of which \$2,303.1 million, or 98 percent, were shipped by plants classified in industry 3731, Ship Building and Repairing, while

the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 99 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture <sup>1</sup>	Cost of materials	Value of work done <sup>1</sup>	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3731.--SHIP BUILDING AND REPAIRING												
United States, total.....	413	252	137.4	1,063.8	113.0	228.6	809.4	1,417.0	1,077.3	2,494.4	68.3	114.6	1,009.7
Northeast.....	111	57	39.5	326.1	26.7	53.1	189.1	397.8	286.1	683.9	18.1	39.7	374.4
New York.....	39	21	3.1	23.8	2.7	5.2	19.4	36.4	17.3	53.6	0.8	3.7	36.0
New Jersey.....	25	14	3.2	29.5	2.7	5.6	23.7	40.6	15.1	55.6	0.7	7.9	73.2
North Central.....	37	24	6.8	46.1	6.0	12.2	38.7	68.9	56.4	125.3	3.3	4.0	33.0
Wisconsin.....	6	6	1.1	7.8	1.0	2.1	6.5	11.2	11.3	22.5	0.2	1.6	14.0
South Atlantic.....	79	48	39.4	297.6	35.3	70.8	252.8	394.4	252.1	646.5	15.5	34.7	289.7
East South Central....	28	18	12.7	92.5	10.9	22.1	74.2	94.4	87.0	181.3	4.8	8.8	53.6
West South Central....	78	52	19.1	136.5	16.7	35.2	114.2	202.5	179.4	381.9	18.1	12.0	106.5
Louisiana.....	45	29	12.0	86.3	10.7	23.5	73.9	128.6	134.3	262.9	(D)	7.2	64.8
West.....	79	52	19.9	164.6	17.4	35.2	140.2	258.1	216.2	474.4	8.5	(D)	(D)
Washington.....	26	16	6.3	56.1	5.4	11.6	49.0	73.0	79.0	152.1	2.0	(D)	(D)
California.....	41	30	10.8	85.8	9.7	19.3	73.4	136.2	114.6	250.8	4.8	9.3	92.6

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

<sup>1</sup>Establishments in this industry reported value of work done rather than value of shipments. Consequently, the formula for computing value added by manufacture was not adjusted for inventory change between the beginning and end of the year. It does include value added by resale.

TABLE 3. Quantity and Value of Work Done by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and work done on these products as "secondary" products. See appendix under "Value of work done")

Product code	Product	Unit of measure	Total value of work done <sup>1</sup>			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3731- --	SHIP BUILDING AND REPAIRING, TOTAL <sup>2</sup> .....		(X)	2,350.1	(X)	1,518.0
37311 --	Nonpropelled ships, new construction.....		(X)	152.6	(X)	82.2
37311 11	Nonpropelled ships, new construction, military, including hopper barges, tank barges, covered cargo barges, deck barges, dredges, car floats, etc.....	Number of ships.....	40	5.1	202	1.6
	Nonpropelled ships--nonmilitary ships, new construction:					
37311 21	Hopper barges.....	..do.....	490	34.5	490	18.8
37311 31	Tank barges.....	..do.....	362	50.5	911	17.1
37311 41	Covered cargo barges.....	..do.....	151	13.0	162	9.2
37311 51	Deck barges.....	..do.....	285	27.0	229	7.6
37311 61	Dredges.....	..do.....			33	3.0
37311 71	Car floats.....	..do.....			-	-
37311 75	Drilling platforms.....	Number.....	186	22.5		
37311 81	Other nonmilitary nonpropelled vessels.....	Number of ships.....			1,284	25.0
37312 11	Self-propelled ships, new construction, U.S. military (including combat ships, troop transport vessels, fleet auxiliaries service craft, etc.).....		(X)	973.1	(X)	681.7
37313 --	Self-propelled ships, nonmilitary, new construction.....		(X)	361.0	(X)	242.8
37313 11	Yachts.....	Number.....	652	30.0		
37313 21	Nonmilitary, including passenger ships, passenger-cargo, dry cargo, tankers, towboats, tugboats, tender vessels, commercial sailing vessels, yachts, ferryboats, fireboats, etc.....	Dead wt. tons.	(NA)	331.0	(X)	242.8
37314 --	Ship repair, U.S. military.....		(X)	422.9	(X)	221.8
	Military sea transportation service:					
37314 21	Conversions and reconversions.....		(X)	43.7	(X)	2.3
37314 29	All other repairs.....		(X)	123.4	(X)	25.4
	All other:					
37314 31	Conversion and reconversions.....		(X)	111.8	(X)	62.3
37314 39	All other repairs.....		(X)	144.0	(X)	131.8
37316 --	Repair of nonmilitary ships.....		(X)	406.3	(X)	277.4
	Maritime Administration:					
37316 13	Conversions and reconversions.....		(X)	12.0		
37316 19	All other repairs.....		(X)	58.7	(X)	19.4
	All others:					
37316 53	Conversions and reconversions.....		(X)	91.9	(X)	19.3
37316 59	All other repairs.....		(X)	243.6	(X)	238.3
37316 00	Repair of nonmilitary ships, n.s.k.....		(X)	0.1	(X)	0.4
37310 00	Ship building and repairing, n.s.k. (Represents principally establishments with 10 or more employees in 1967. See Note.)....		(X)	30.2		
37310 02	Ship building and repairing, n.s.k. (Represents principally establishments with 10 or less employees in 1967. See Note.)....		(X)	4.0	(X)	11.9

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

- Represents zero. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>The total value of work done for ship building and repairing differs from "value of shipments." See text for explanation. However, the figures for codes 37311 11 through 37311 81, 37313 11 and 37313 21 represent value of shipments.

<sup>2</sup>Excludes products manufactured by facilities operated by the Department of Defense, or at Federal, District of Columbia, and State prisons.



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963		
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)	
INDUSTRY 3731.--SHIP BUILDING AND REPAIRING							
	Materials, parts, containers, and supplies, total.....		(X)	1,023.6	(X)	612.5	
	Mill shapes and forms (except castings):						
	Carbon steel:						
331011	Bar and bar shapes.....	1,000 short tons.	109.7	18.1	47.3	7.9	
331012	Sheet and strip.....	..do.....	91.2	14.9	28.2	5.4	
331013	Plates.....	..do.....	638.8	94.8	477.6	69.3	
331015	Structural shapes.....	..do.....	179.6	28.4	104.3	15.2	
331017	Wire and wire products.....	..do.....	6.5	2.0	3.4	1.5	
331019	All other carbon steel mill shapes and forms.....	..do.....	50.8	9.2	23.9	5.1	
331020	Alloy steel (except stainless).....	..do.....	16.2	7.0	17.6	9.4	
331031	Stainless steel.....	..do.....	3.8	4.8	4.3	6.8	
	Copper and copper-base alloy:						
335728	Bare wire (for electrical conduction only).....	Million lbs.....	0.4	0.4	4.0	4.8	
335790	Insulated wire and cable.....	Million lbs. (copper content)	7.3	10.8			
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	2.2	1.6	0.7	0.8	
335123	Plate, sheet, and strip (including military cups and discs).. Pipe and tube.....	..do.....	1.0	1.0	1.1	1.0	
335127	.....	..do.....	11.2	11.5	5.8	4.4	
	Aluminum and aluminum-base alloy:						
335202	Sheet, plate, and foil.....	..do.....	7.4	4.0	4.0	2.0	
335205	Extruded shapes, rod, bar, pipe, etc.....	..do.....	14.3	13.2	2.1	2.4	
335209	All other aluminum mill shapes and forms, wire, rolled rod, etc.....	..do.....					
	Castings (rough and semifinished):						
332300	Steel.....	1,000 short tons.	9.3	8.3	5.6	4.3	
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	0.9	0.9	0.4	0.4	
336200	Copper and copper-base alloy.....	..do.....	2.5	3.1	5.9	5.8	
	Engines:						
351920	Diesel and semidiesel.....	1,000.....	2.6	32.7	(NA)	8.1	
351901	Gasoline and other carburetor.....	..do.....	1.8	4.7	(NA)	0.6	
362120	Integral horsepower motors and generators (1 hp. and over).....	..do.....	3.2	6.2	2.7	5.4	
242120	Dressed lumber.....	Million bd. ft...	28.9	5.6	(NA)	2.6	
243201	Plywood.....	..do.....	(X)	2.8	(X)	1.2	
282130	Thermoplastic resins.....	Million lbs. dry basis.....	3.2	1.7	0.8	0.3	
282140	Thermosetting resins.....	..do.....	2.6	0.6	(NA)	0.8	
322931	Glass fiber.....	Million lbs.....	1.9	1.2	(NA)	0.4	
970099	All other materials and components, parts, containers, and supplies consumed.....	.....	(X)	675.0	(X)	373.0	
976000	Materials, parts, containers, and supplies, n.s.k. <sup>1</sup> .....	.....	(X)	59.1	(X)	73.0	

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3731, these small establishments accounted for approximately 0 percent of payrolls and 0 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

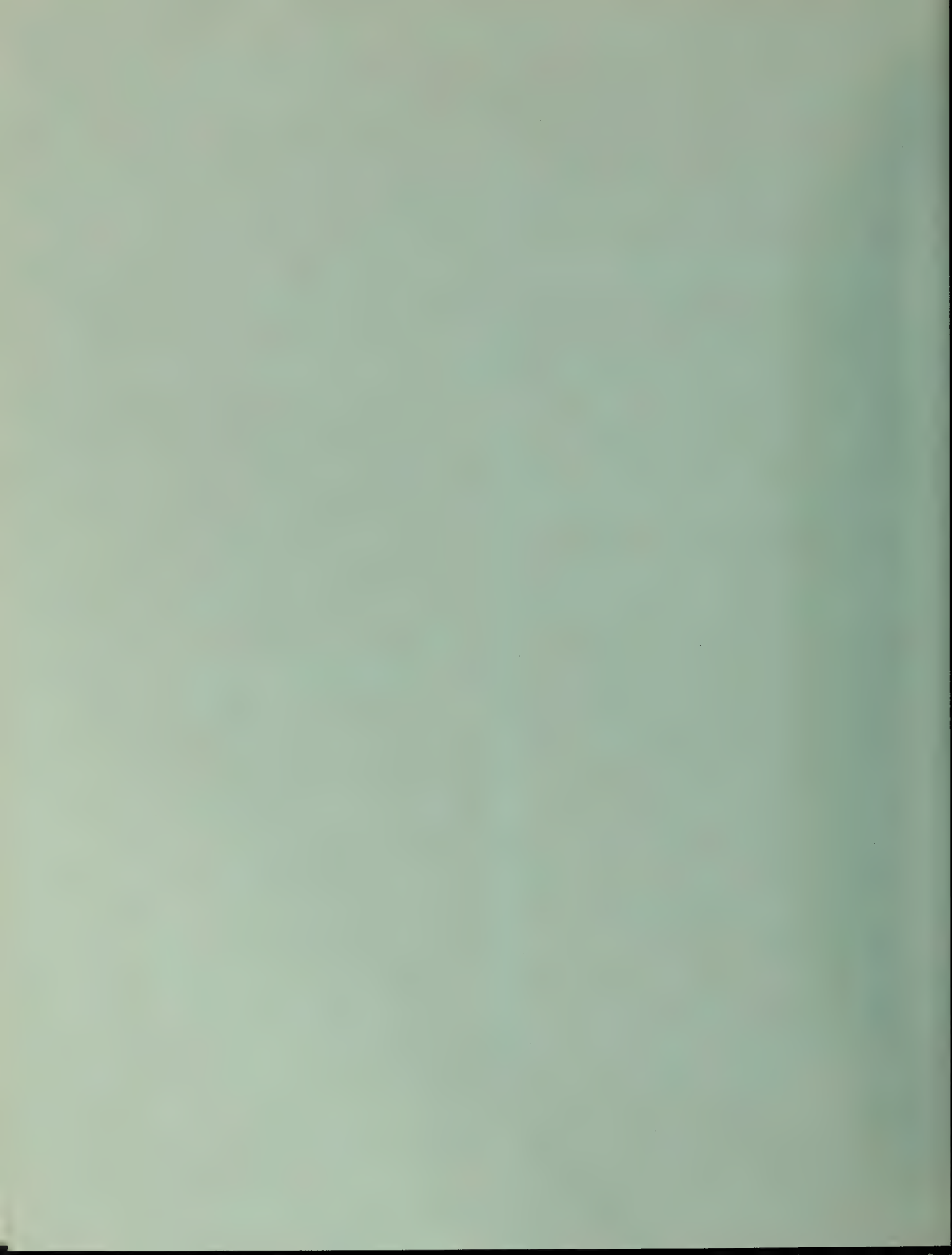
As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of work done--**The amounts under value of work done include the cost of labor, the cost of purchased materials and parts received during the year, overhead and profits. Alternative methods of reporting the value of work done where supplied to manufacturers in this industry in the following order of preference:

- (a) Multiply the estimated percentage of completion during 1967 by the contract price of the vessel.
- (b) Net billing for work done during 1967.
- (c) Payments received for work done during 1967.

Value of work done applies to selected primary products of the industry. For other primary products, as well as secondary products and receipts for services rendered, value of shipments was reported.

Value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), as well as miscellaneous

receipts such as receipts for contract work performed for others, installation and repair (except ship repair), sales of scrap, and sale of products bought and resold without further processing. Included are items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**Value added for this industry is obtained by subtracting the cost of materials, supplies, and containers, fuel, purchased electric energy and contract work from the value of work done on ships, the value of shipments for secondary products manu-

factured, plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly).

"Value added" avoids the duplication in the value of shipments figure which results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

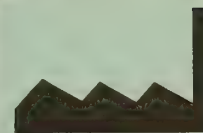
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-37C-2

## INDUSTRY SERIES

### Boat building and repairing

SIC Code 3732

**preliminary  
report**

The Boat Building and Repairing Industry includes establishments primarily engaged in building and repairing all types of boats, except rubber boats (industry 3069). Establishments primarily engaged in cleaning and storing boats and in the rental of dock space, and yacht clubs and classified in nonmanufacturing industries.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Boat Building and Repairing Industry amounted to \$572.8 million, an increase of 59 percent compared with 1963. Value added by

manufacture at \$275.3 million in 1967 was 50 percent more than value added in 1963. Average employment in the industry showed an increase of 23 percent from 1963 to a total of 30,7 thousand employees in 1967.

Of the \$572.8 million total value of shipments and other receipts of establishments classified as boat building and repairing, \$18.4 million were products primary to other industries; and \$29.8 million were receipts for miscellaneous activities. The industry shipments of primary products represented 97 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was also 97 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total	With 20 employees or more (number)	Number	Payroll (million dollars)	Number	Man-hours (millions)	Wages (million dollars)							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)							
INDUSTRY 3732.--BOAT BUILDING AND REPAIRING														
1967 Census....	1,595	287	30.7	163.5	26.4	52.3	128.5	275.3	299.3	572.8	16.4	115.8	97	92
1966 ASM <sup>1</sup> .....	(NA)	(NA)	30.8	145.7	25.2	49.2	111.8	247.4	261.3	485.1	*12.4	137.5	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	28.9	136.6	24.6	49.5	109.1	220.8	235.8	448.8	12.7	91.4	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	26.6	126.6	22.5	46.4	99.2	217.9	212.5	423.1	*14.1	84.0	(NA)	(NA)
1963 Census....	1,626	268	24.9	116.1	20.9	42.0	91.4	183.1	183.2	360.2	13.5	78.6	97	95
1962 ASM <sup>1</sup> .....	(NA)	(NA)	22.7	104.3	18.8	40.0	80.7	148.1	174.5	314.4	*12.4	66.5	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	22.7	100.6	18.7	40.0	77.5	138.1	175.8	316.6	*17.9	57.8	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	26.4	111.4	22.2	43.4	86.0	155.6	201.7	357.6	*22.5	65.6	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	29.1	121.5	24.9	49.9	96.5	176.4	216.4	389.4	*16.6	77.2	(NA)	(NA)
1958 Census <sup>2</sup> ...	1,651	277	25.3	103.6	21.2	40.3	81.4	157.3	178.8	329.0	15.3	75.0	93	95

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 3 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

**BUREAU OF THE CENSUS** George Hay Brown, Director



The total value of boat building and repairing by all producers in 1967 was \$568.3 million of which \$525.0 million, or 92 percent, were shipped by plants classified in industry 3732, Boat Building and Repairing, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 95 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967										1963		
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
	INDUSTRY 3732.--BOAT BUILDING AND REPAIRING												
United States, total.....	1,595	287	30.7	163.5	26.4	52.3	128.5	275.3	299.3	572.8	16.4	24.9	183.1
New England.....	168	22	2.3	12.7	2.0	3.9	10.1	19.4	19.5	40.2	1.0	2.5	19.4
Maine.....	49	2	0.3	1.5	0.3	0.6	1.3	2.2	2.0	4.2	0.1	0.5	2.6
Massachusetts.....	61	12	1.0	6.2	0.9	1.8	4.9	9.7	9.4	18.9	0.3	(D)	(D)
Connecticut.....	29	2	0.3	1.7	0.2	0.4	1.2	3.7	2.5	6.4	(D)	0.3	2.8
Middle Atlantic.....	195	40	4.6	27.0	4.0	8.3	21.8	42.1	42.7	84.2	1.6	3.8	28.8
New Jersey.....	81	19	2.3	13.1	2.0	4.4	11.2	21.1	24.2	44.2	0.7	1.2	9.6
North Central.....	208	54	5.9	32.8	4.9	10.0	25.0	55.2	74.9	132.2	3.1	5.7	42.8
Wisconsin.....	35	5	0.3	1.5	0.3	0.5	1.1	2.4	3.2	5.6	0.3	0.8	5.5
South Atlantic.....	411	77	8.4	42.3	7.1	13.8	32.4	67.1	72.4	137.9	4.4	6.1	43.5
Virginia.....	52	8	0.5	2.5	0.5	0.9	1.9	4.3	4.0	8.1	0.9	0.5	3.9
Florida.....	222	44	4.8	23.9	3.9	7.5	17.4	39.5	41.1	79.2	(D)	2.5	17.7
East South Central...	78	17	1.6	7.2	1.5	2.8	6.1	14.4	14.4	28.7	1.0	1.0	7.2
Tennessee.....	29	8	0.9	4.1	0.8	1.6	3.4	8.7	10.3	18.9	0.6	(D)	(D)
Mississippi.....	16	2	0.2	0.7	0.2	0.3	0.6	1.4	1.1	2.4	0.1	(D)	(D)
West South Central...	187	34	3.5	15.7	3.0	6.0	11.9	29.4	29.3	57.0	2.9	2.6	14.5
Louisiana.....	72	10	1.0	4.7	0.9	1.9	3.9	7.6	6.8	14.2	0.8	0.8	6.3
West.....	348	43	4.5	25.8	4.0	7.5	21.3	47.6	46.0	92.4	2.3	3.1	26.8
Utah.....	8	4	0.2	0.7	0.1	0.2	0.6	1.0	2.1	3.2	0.1	(D)	(D)
California.....	204	27	2.7	15.8	2.3	4.6	12.8	30.2	23.0	52.7	1.4	1.9	16.7

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (number of boats)	Value (million dollars)	Quantity (number of boats)	Value (million dollars)
3732- --	BOAT BUILDING AND REPAIRING, TOTAL.....	(X)	568.3	(X)	338.1
37321 --	Inboard motorboats.....	(X)	254.1	(X)	127.5
37321 11	Boats of special Army, Navy, or Coast Guard design (new construction)....	( <sup>1</sup> )	( <sup>1</sup> )	(NA)	5.2
	Boats, nonmilitary, new construction (other than specially designed types built for the Army, Navy, or Coast Guard):				
	Motorboats, excluding sailboats with auxiliary power, lifeboats, and prefabricated boat construction kits:				
	Inboard powered boats:				
37321 31	Runabouts (wood, metal, plastic reinforced).....	1,376	5.1	3,112	10.0
	Cabin cruisers:				
	Under 26' in length:				
37321 41	Wood.....	960	4.8	1,928	7.6
37321 51	Metal.....	172	1.2	29	0.1
37321 61	Plastics (reinforced).....	13,442	37.7	982	3.3
	26' or over and less than 40' in length:				
37321 43	Wood.....	4,647	50.3	5,130	48.9
37321 53	Metal.....	730	8.7	354	4.1
37321 63	Plastics (reinforced).....	1,378	21.2	349	6.1
	40' and over in length:				
37321 45	Wood.....	497	20.3	349	15.9
37321 55	Metal.....	301	8.2	67	3.8
37321 65	Plastics (reinforced).....	158	5.9	77	2.3
	Inboard-outdrive boats (inboard engine with outdrive propulsion)....				
37321 73	Under 20' in length.....	16,650	44.6	8,527	19.1
37321 75	20' and over in length.....	6,882	25.6		
37321 00	Inboard motorboats, n.s.k.....	(X)	120.5	(X)	0.9
37322 --	Outboard motorboats, including prefabricated kits.....	(X)	70.0	(X)	78.0
	Outboard motorboats (all types) including prefabricated kits (excluding sailboats with auxiliary power, lifeboats):				
	Runabouts:				
	13'6" and under in length:				
37322 21	Wood.....	56,360	4.2	5,761	1.3
37322 31	Metal.....			37,322	3.7
37322 41	Plastic (reinforced).....			9,281	3.0
	13'7" to 15'6" in length:				
37322 23	Wood.....	28,960	3.1	4,904	1.4
37322 33	Metal.....			30,292	6.3
37322 43	Plastic (reinforced).....			29,247	15.1
	15'7" to 17'6" in length:				
37322 25	Wood.....	733	0.6	4,129	3.3
37322 35	Metal.....	7,208	1.3	8,731	3.8
37322 45	Plastic (reinforced).....	25,004	20.9	24,027	20.6
	17'7" and over in length:				
37322 26	Wood.....	744	1.2	3,071	3.4
37322 36	Metal.....			1,574	1.0
37322 46	Plastic (reinforced).....			3,087	3.3
	Utility:				
37322 27	Wood.....	18,338	29.4	320	0.4
37322 37	Metal.....			17,307	2.9
37322 47	Plastic (reinforced).....			1,671	0.7
	Cabin cruisers:				
37322 28	Wood.....	88	0.3	691	1.1
37322 38	Metal.....	323	0.7	824	1.2
37322 48	Plastic (reinforced).....	765	2.5	2,735	3.7
37322 51	Prefabricated boat construction kits.....	( <sup>2</sup> )	( <sup>2</sup> )	(NA)	0.2
37322 00	Outboard motor boats, n.s.k.....	(X)	3.7	(X)	1.4
37323 --	All other boats (sailboats, rowboats, canoes, etc.).....	(X)	45.3	(X)	36.5
37323 13	Sailboats.....	46,603	32.9	13,724	17.9
37323 19	Other boats, including rowboats, canoes, skiffs, dinghies, lifeboats, etc.....	58,518	11.5	85,954	18.5
37323 00	All other boats, n.s.k.....	(X)	0.9	(X)	0.1

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (number of boats)	Value (million dollars)	Quantity (number of boats)	Value (million dollars)
3732- --	BOAT BUILDING AND REPAIRING,--Continued				
37324 --	Boat repair.....	(X)	81.6	(X)	42.6
37324 11	Repair of U.S. military boats (receipts for repair work done on Army, Navy, or Coast Guard boats).....	(X)	31.5	(X)	7.1
37324 21	Repair of nonmilitary boats (receipts for repair work done on all other boats).....	(X)	48.2	(X)	34.8
37324 00	Boat repair, n.s.k.....	(X)	1.9	(X)	0.6
37320 00	Boat building and repairing, n.s.k. (Represents principally establishments with 10 or more employees in 1967. See Note.).....	(X)	75.5	}	53.5
37320 02	Boat building and repairing, n.s.k. (Represents principally establishments with fewer than 10 employees in 1967. See Note.).....	(X)	41.8		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. Revised. (X) Not applicable.

<sup>1</sup>Product code 37321 11 combined with 37321 00, inboard motorboats, n.s.k. for 1967.

<sup>2</sup>Prefabricated boat construction kits are included with utility boats for 1967.



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963		
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)	
INDUSTRY 3732.--BOAT BUILDING AND REPAIRING							
	Materials, parts, containers, and supplies, total.....		(X)	272.2	(X)	167.5	
	Mill shapes and forms (except castings):						
	Carbon steel:						
331011	Bar and bar shapes.....	1,000 short tons.	1.5	0.2	0.9	0.2	
331012	Sheet and strip.....	..do.....	8.4	1.2	1.5	0.2	
331013	Plates.....	..do.....	6.8	1.2	3.0	0.5	
331015	Structural shapes.....	..do.....	2.0	0.3	0.8	0.1	
331017	Wire and wire products.....	..do.....	0.1	(Z)	0.2	0.1	
331019	All other carbon steel mill shapes and forms.....	..do.....	0.5	0.1	1.1	0.2	
331020	Alloy steel (except stainless).....	..do.....	1.0	0.2	0.1	(Z)	
331031	Stainless steel.....	..do.....	0.3	0.5	0.5	0.6	
	Copper and copper-base alloy:						
335728	Bare wire (for electrical conduction only).....	Million lbs.....	(Z)	(Z)	0.3	0.3	
335790	Insulated wire and cable.....	Million lbs. (copper content).	0.3	0.3			
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	0.1	0.1	0.1	(Z)	
335123	Plate, sheet, and strip (including military cups and discs)...	..do.....	(Z)	(Z)	(Z)	(Z)	
335127	Pipe and tube.....	..do.....	0.5	0.3	0.3	0.4	
	Aluminum and aluminum-base alloy:						
335202	Sheet, plate and foil.....	..do.....	17.7	7.1	15.2	6.6	
335205	Extruded shapes, rod, bar, pipe, etc.....	..do.....	4.1	2.9	3.2	1.9	
335209	All other aluminum mill shapes and forms, wire, rolled rod, etc.....	..do.....	0.3	0.2	0.2	0.1	
	Castings (rough and semi-finished): <sup>1</sup>						
332300	Steel.....	1,000 short tons.	0.3	0.2	0.2	0.1	
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	0.6	0.4	1.0	0.5	
336200	Copper and copper-base alloy.....	..do.....	(NA)	1.7	0.9	1.1	
	Engines: <sup>1</sup>						
351920	Diesel and semidiesel.....	1,000.....	1.6	4.9	0.6	2.9	
351901	Gasoline and other carburetor.....	..do.....	30.9	33.1	18.6	15.1	
362120	Integral horsepower motors and generators (1 hp. and over) <sup>1</sup> .....	..do.....	1.0	1.0	0.2	0.2	
242120	Dressed lumber.....	Million bd. ft...	(NA)	3.8	17.4	4.2	
243201	Plywood.....	..do.....	(X)	9.5	(X)	6.9	
282130	Thermoplastic resins.....	Million lbs. dry basis.....	38.4	8.8	3.6	1.2	
282140	Thermosetting resins.....	..do.....			(NA)	7.2	
322931	Glass fiber.....	Million lbs.....	(NA)	11.4	(NA)	7.8	
970099	All other materials and components, parts, containers, and supplies consumed.....	..do.....	(X)	89.6	(X)	52.2	
976000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> .....	..do.....	(X)	93.2	(X)	56.5	

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable. (Z) Less than 0.1 when rounded.

<sup>1</sup>No data are available on the quantities of castings, engines or integral horsepower motors and generators produced and consumed in the same establishment.<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3732, these small establishments accounted for approximately 7 percent of payrolls and 8 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# 1967 CENSUS OF MANUFACTURES



MC67(P)-37C-3

## INDUSTRY SERIES

### Locomotives and parts

SIC Code 3741

**preliminary  
report**

The Locomotives and Parts Industry includes establishments primarily engaged in building and rebuilding locomotives (including frames and parts, not elsewhere classified) of any type or gauge. Railroad shops rebuilding and repairing locomotives, or building new locomotives, are classified in Major Group 40.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Locomotives and Parts Industry amounted to \$689.6 million, an increase of 57 percent compared with 1963. Value added by

manufacture at \$345.2 million in 1967 was 85 percent more than value added in 1963. Average employment in the industry showed an increase of 12 percent from 1963 to a total of 16.0 thousand employees in 1967.

Of the \$689.6 million total value of shipments and other receipts of establishments classified as locomotives and parts, \$125.2 million were products primary to other industries; and \$39.2 million were receipts for miscellaneous activities. The industry shipments of primary products represented 81 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 83 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3741. --LOCOMOTIVES AND PARTS														
1967 Census.....	27	15	16.0	132.5	11.7	23.6	90.8	345.2	346.0	689.6	10.8	119.7	81	92
1966 ASM <sup>1</sup> .....	(NA)	(NA)	17.2	141.6	13.3	27.9	103.0	318.2	393.4	700.7	9.0	119.9	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	17.0	130.9	13.2	27.0	94.8	277.5	353.0	621.1	9.9	109.3	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	15.0	114.9	11.2	23.7	80.2	211.7	282.7	478.1	4.4	102.3	(NA)	(NA)
1963 Census.....	24	12	14.3	99.7	10.6	20.8	67.4	186.2	249.8	437.9	7.2	83.8	83	90
1962 ASM <sup>1</sup> .....	(NA)	(NA)	14.2	99.8	10.7	21.6	68.7	224.2	242.0	443.2	5.2	85.7	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	12.0	80.1	8.2	16.1	49.1	138.8	189.6	344.0	2.8	67.3	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	13.5	91.7	9.3	19.7	58.5	176.0	219.0	395.8	3.6	84.2	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	14.9	94.6	10.6	21.1	61.8	204.9	245.5	434.6	*2.6	86.6	(NA)	(NA)
1958 Census <sup>2</sup> ...	25	13	15.3	90.1	10.7	21.1	58.3	152.1	224.8	407.5	5.3	68.6	85	90

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

**BUREAU OF THE CENSUS** George Hay Brown, Director

The total value of locomotives and parts shipped by all producers in 1967 was \$571.6 million of which \$525.2 million, or 92 percent, were shipped by plants classified in industry 3741, Locomotives and Parts, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 90 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

#### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3741, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-35F, Mining Machinery and Equipment.

#### TABLE 2. **General Statistics, by Geographic Areas: 1967 and 1963**

(Geographic data for this industry will not be published separately)



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers					
		1967			1963		
		Quantity (number of units)	Weight (1,000 short tons)	Value (million dollars)	Quantity (number of units)	Weight (1,000 short tons)	Value (million dollars)
3741- --	LOCOMOTIVES AND PARTS, TOTAL <sup>1</sup> .....	(X)	(X)	571.6	(X)	(X)	378.1
37411 --	Locomotives, new and rebuilt, railroad road service and switching type, total.....	(X)	(X)	<sup>2</sup> 310.3	(X)	(X)	<sup>2</sup> 132.7
37411 44	Diesel-electric (new and rebuilt).....	<sup>2</sup> 1,418	<sup>2</sup> 182.9	<sup>2</sup> 310.3	<sup>2</sup> 686	<sup>2</sup> 73.8	<sup>2</sup> 132.7
37411 46	Other (new and rebuilt).....						
37412 --	Mining and industrial type locomotives, new and rebuilt, total...	(X)	(X)	9.6	(X)	(X)	8.7
37412 10	Mining type, including rebuilt:						
	As reported in the Census of Manufactures.....	(X)	2.0	5.5	(X)	1.9	3.2
	As reported on Census Form MA-35F.....	220	(X)	5.0	181	(X)	3.4
37412 21	Industrial type (new and rebuilt).....	77	2.8	4.1	72	2.8	5.6
37413 11	Parts for locomotives for sale separately (except wheels), including tenders, locomotive air brakes, repair parts, locomotive stokers, lubrication systems, super heaters, etc....	(X)	(X)	<sup>2</sup> 248.0	(X)	(X)	<sup>2</sup> 236.7
37410 00	Locomotives and parts, n.s.k. (Represents principally establish- ments with 10 employees or more in 1967. See Note.).....	(X)	(X)	3.6	-	-	-
37410 02	Locomotives and parts, n.s.k. (Represents principally establish- ments with fewer than 10 employees in 1967. See Note.).....	(X)	(X)	0.1	-	-	-

- Represents zero. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Data excludes parts shipped by railroad repair shops. No new or rebuilt locomotives were produced in railroad repair shops in 1963 and data for 1967 are suppressed to avoid disclosing the operations of individual companies.

<sup>2</sup>In 1963, rebuilt locomotives were included with code 37413 11, parts for locomotives, etc. In 1967, rebuilt locomotives are included with new locomotives.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
INDUSTRY 3741.--LOCOMOTIVES AND PARTS						
	Materials, parts, containers, and supplies, total.....		(X)	322.2	(X)	233.3
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	14.6	2.6	11.0	1.9
331012	Sheet and strip.....	do.	27.9	4.2	28.8	4.8
331013	Plates.....	do.	80.2	11.2	58.7	8.5
331015	Structural shapes.....	do.	33.7	6.7	18.0	2.5
331017	Wire and wire products.....	do.				
331019	All other carbon steel mill shapes and forms.....	do.				
331020	Alloy steel (except stainless).....	do.	1.5	0.7	1.8	1.0
331031	Stainless steel.....	do.				
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction only).....		(D)	(D)	(D)	(D)
335102	Rod, bar and mechanical wire, including extruded and/or drawn shapes.....		(D)	(D)	(D)	(D)
335123	Plate, sheet, and strip, (including military cups and discs).....		(D)	(D)	(D)	(D)
335127	Pipe and tube.....		(D)	(D)	(D)	(D)
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate and foil.....	Million lbs.	0.9	0.6	0.5	0.3
335205	Extruded shapes.....	do.				
335209	All other aluminum mill shapes and forms.....	do.				
331051	Pig iron.....		(D)	(D)	(D)	(D)
999811	Iron and steel scrap.....		(D)	(D)	-	-
	Castings (rough and semi-finished): <sup>1</sup>					
332011	Iron (gray and malleable).....		(D)	(D)	(D)	(D)
332300	Steel.....		(D)	(D)	(D)	(D)
336100	Aluminum and aluminum-base alloy.....		(D)	(D)	(D)	(D)
339100	Iron and steel forgings <sup>1</sup> .....		(D)	(D)	(D)	(D)
351920	Diesel and semidiesel engines <sup>1</sup> .....		(D)	(D)	(D)	(D)
362120	Integral horsepower electric motors and generators (1 hp. and over) <sup>1</sup> .....		(D)	(D)	(D)	(D)
	Bearings:					
356218	Ball.....		(D)	(D)	(X)	(D)
356201	Roller.....					
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	294.2	(X)	213.1
976000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> .....		(X)	2.0	(X)	1.3

n.s.k. Not specified by kind. (D) Included with material code 970099, "All other materials, etc." to avoid disclosing the operations of individual companies. (X) Not applicable.

<sup>1</sup>No data are available on the quantities of castings, iron and steel forgings, diesel and semi-diesel engines, or integral horsepower electric motors and generators produced and consumed in the same establishment.

<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3741, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

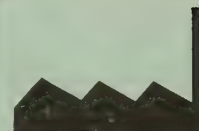
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-37C-4

## INDUSTRY SERIES

**preliminary  
report**

### Railroad and street cars

SIC Code 3742

The Railroad and Street Cars Industry includes establishments primarily engaged in building and rebuilding railroad, street, and rapid transit cars and car equipment for operation on rails for freight and passenger service. This industry also includes establishments primarily engaged in manufacturing trackless trolley busses. Establishments primarily engaged in manufacturing mining cars are classified in industry 3532. Repair shops, owned and operated by railroads or local transit companies, rebuilding or repairing cars, or building new cars for their own account, are classified in Major Groups 40 and 41.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the

Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Railroad and Street Cars Industry amounted to \$1,408.4 million, an increase of 52 percent compared with 1963. Value added by manufacture at \$427.4 million in 1967 was 20 percent more than value added in 1963. Average employment in the industry showed an increase of 31 percent from 1963 to a total of 40.3 thousand employees in 1967.

Of the \$1,408.4 million total value of shipments and other receipts of establishments classified as railroad and street cars, \$82.1 million were products primary to other industries; and

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)
INDUSTRY 3742.—RAILROAD AND STREET CARS														
1967 Census.....	93	68	40.3	291.7	32.4	62.3	221.2	427.4	937.3	1,408.4	28.7	267.9	94	95
1966 ASM <sup>1</sup> .....	(NA)	(NA)	43.8	324.5	36.0	72.3	252.2	642.2	1,077.3	1,695.7	35.1	286.4	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	40.9	286.4	33.2	65.6	221.5	528.9	984.8	1,519.8	25.7	253.1	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	37.4	255.2	30.0	60.7	197.5	509.9	818.2	1,289.7	25.2	242.6	(NA)	(NA)
1963 Census....	78	58	30.7	202.0	24.3	47.2	150.1	355.2	591.0	927.2	10.9	186.2	91	93
1962 ASM <sup>1</sup> .....	(NA)	(NA)	27.4	179.6	20.9	40.5	128.1	277.0	418.4	665.7	11.9	164.1	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	22.6	144.8	16.7	31.2	96.7	184.2	335.4	538.9	8.5	139.9	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	28.7	170.7	23.1	42.4	124.8	275.2	461.5	723.0	8.5	164.5	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	23.4	139.2	17.9	33.6	96.9	246.0	311.1	513.4	9.3	145.2	(NA)	(NA)
1958 Census <sup>2</sup> ...	67	44	24.3	133.3	17.9	32.6	91.1	167.6	310.8	562.2	8.6	95.6	87	90

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued November 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**

\$36.7 million were receipts for miscellaneous activities. The industry shipments of primary products represented 94 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 91 percent in 1963.

The total value of railroad and street cars shipped by all producers in 1967 was \$1,354.8 million of which \$1,289.6 million, or 95 percent, were shipped by plants classified in industry

3742, Railroad and Street Cars, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 93 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total	With 20 employees or more (number)	Number	Payroll (million dollars)	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
	INDUSTRY 3742.—RAILROAD AND STREET CARS												
United States, total.....	93	68	40.3	291.7	32.4	62.3	221.2	427.4	937.3	1,408.4	28.7	30.7	355.2
Illinois.....	20	12	3.6	26.7	2.7	5.4	17.3	48.3	69.1	118.4	3.5	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3A. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers				
		1967		1963		
		Quantity (number of units)	Value (million dollars)	Quantity (number of units)	Weight (1,000 short tons)	Value (million dollars)
3742- --	RAILROAD AND STREET CARS, TOTAL <sup>1</sup> .....	(X)	1,354.8	(X)	(X)	871.0
37421 --	Passenger train cars, new, total.....	(X)	6.0	(X)	(X)	36.5
37421 11	Coach (excluding coach combination).....	72	6.0	266	12.7	36.5
37421 98	Other passenger train cars, including postal, postal-nonpassenger combinations, express refrigeration and milk, self-propelled passenger and combination passenger-baggage cars, railmotor and multiple-unit electric cars, etc.....					
37422 --	Freight train cars, new, total.....	(X)	1,016.8	(X)	(X)	523.0
37422 11	Box.....	18,558	316.7	10,652	403.5	182.3
37422 15	Flat.....	5,388	87.1	7,308	255.8	99.6
37422 25	Gondola.....	5,836	79.5	250	7.9	2.9
37422 32	Hopper (covered):	3,710	59.2	6,689	(X)	92.9
37422 34	Aluminum.....					
37422 34	Other.....	19,068	271.5			
37422 36	Hopper (uncovered):	1,817	23.3	1,693	(X)	24.9
37422 38	Aluminum.....					
37422 38	Other.....					
37422 45	Caboose.....	8,529	179.5	5,933	(X)	116.0
37422 41	Tank.....					
37422 43	Refrigerator.....					
37422 98	Other freight train cars, including industrial rail cars not suitable for use on common carriers.....					
37423 --	Street cars, parts and accessories for railroad and street cars, rebuilt passenger and freight train cars, total.....	(X)	325.1	(X)	(X)	310.2
37423 13	Other cars, including railroad work equipment, street, subway, rapid transit, interurban cars, trolley buses, and self-propelled cars.....	(X)	87.9	(X)	(X)	287.2
37423 21	Parts and accessories for passenger and freight train cars, self-propelled cars and street, rapid transit, and interurban cars, (except wheels), for sale separately.....	(X)	206.5			
37423 31	Rebuilt passenger and freight train cars:	(NA)	30.7	76	4.5	5.0
37423 51	Rebuilt passenger train cars.....					
37423 51	Rebuilt freight train cars.....			4,166	105.2	18.0
37420 00	Railroad and street cars, n.s.k. (Represents principally establishments with 10 employees or more in 1967. See Note.).....	(X)	6.4	(X)	(X)	1.3
37420 02	Railroad and street cars, n.s.k. (Represents principally establishments with fewer than 10 employees in 1967. See Note.).....	(X)	0.5			

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Excludes new and rebuilt railroad cars shipped by shops of operating railroads. See table 3B.



**TABLE 3B. New and Rebuilt Passenger and Freight Train Cars Shipped by Shops of Operating Railroads: 1967 and 1963**

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers				
		1967		1963		
		Quantity (number of units)	Value <sup>1</sup> (million dollars)	Quantity (number of units)	Weight (1,000 short tons)	Value <sup>1</sup> (million dollars)
3742- --	NEW AND REBUILT <sup>2</sup> PASSENGER AND FREIGHT TRAIN CARS, TOTAL <sup>3</sup> .....	31,595	324.4	18,255	(X)	178.5
37421 --	New passenger train cars.....	-	-	(X)	(X)	(X)
37421 11	Coach (excluding coach combination).....	-	-	( <sup>4</sup> )	(X)	( <sup>4</sup> )
37421 98	Other passenger train cars.....	-	-	( <sup>4</sup> )	(X)	( <sup>4</sup> )
37422 --	New freight train cars.....	(NA)	(NA)	(NA)	(NA)	(NA)
37422 11	Box.....	4,909	85.4	4,752	150.9	64.9
37422 15	Flat.....	1,867	21.6	497	18.9	8.2
37422 25	Gondola.....	1,299	17.2	-	-	-
37422 34	Hopper (covered).....	( <sup>5</sup> )	( <sup>5</sup> )	-	-	-
37422 38	Hopper (uncovered).....	6,516	71.8	5,368	121.9	46.9
37422 41	Tank.....	-	-	-	-	-
37422 43	Refrigerator.....	( <sup>5</sup> )	( <sup>5</sup> )	921	39.6	19.1
37422 45	Caboose.....	( <sup>5</sup> )	( <sup>5</sup> )	( <sup>4</sup> )	(X)	( <sup>4</sup> )
37422 98	Other freight train cars, including industrial rail cars not suitable for use on common carriers.....	-	-	( <sup>4</sup> )	(X)	( <sup>4</sup> )
37423 --	Rebuilt cars and other cars.....	(NA)	(NA)	(NA)	(NA)	(NA)
37423 31	Rebuilt passenger train cars.....	( <sup>5</sup> )	( <sup>5</sup> )	( <sup>4</sup> )	(X)	( <sup>4</sup> )
37423 51	Rebuilt freight train cars.....	15,798	110.6	5,845	62.5	30.5
37423 13	Other cars, including railroad work equipment, street, subway, rapid transit, trackless trolleys, and interurban cars.....	<sup>5</sup> 1,206	<sup>5</sup> 17.8	<sup>4</sup> 87.2	(NA)	<sup>4</sup> 8.8

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. (X) Not applicable.

<sup>1</sup>Values of railroad cars built by railroads for own use represents the amounts at which they were written into property accounts.

<sup>2</sup>A passenger and freight train car is defined as rebuilt when the cost of dismantling, improvement and modernization is more than 50 percent of the replacement cost of a new unit of the same class and kind at the time of rebuilding. Conversions, reclassifications on units which were reconditioned by defective parts are not included.

<sup>3</sup>Excludes parts for passenger and freight cars, made in railroad car shops.

<sup>4</sup>The 1963 product codes 37421 11, 37421 98, 37422 45, 37422 98 and 37423 31 are included with the figure for "other cars" (code 37423 13.)

<sup>5</sup>The 1967 product codes 37422 34, 37422 43, 37422 45, and 37423 31 are included with the figure for "other cars" (code 37423 13.)

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3742.--RAILROAD AND STREET CARS					
	Materials, parts, containers, and supplies, total.....		(X)	916.2	(X)	575.5
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	122.7	21.8	159.9	23.7
331012	Sheet and strip.....	..do.....	196.7	29.4	225.9	32.4
331013	Plates.....	..do.....	757.5	119.6	554.0	83.7
331015	Structural shapes.....	..do.....	340.0	51.8	236.5	34.5
331017	Wire and wire products.....	..do.....	5.7	1.0	1.5	0.5
331019	All other carbon steel mill shapes and forms.....	..do.....	95.3	29.2	62.9	13.5
331020	Alloy steel (except stainless).....	..do.....	(D)	(D)	19.5	4.0
331013	Stainless steel.....	..do.....	(D)	(D)	1.6	1.8
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction only).....	Million lbs.....	(D)	(D)	(D)	(D)
335102	Rod, bar and mechanical wire, including extruded and/or drawn shapes.....	..do.....	31.4	1.0	(D)	(D)
335123	Plate, sheet, and strip, (including military cups and discs).	..do.....	-	-	(D)	(D)
335127	Pipe and tube.....	..do.....	2.3	0.8	(D)	(D)
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate and foil.....	..do.....	15.4	13.4	6.3	5.9
335205	Extruded shapes.....	..do.....	3.6	1.9	4.3	2.6
335209	All other aluminum mill shapes and forms.....	..do.....	3.6	1.9	4.3	2.6
331051	Pig iron.....	1,000 short tons.	(D)	(D)	(D)	(D)
999811	Iron and steel scrap (purchased scrap only).....	..do.....	25.8	1.0	35.7	0.9
	Castings (rough and semi-finished): <sup>1</sup>					
332011	Iron (gray and malleable).....	..do.....	103.6	43.6	71.6	30.1
332300	Steel.....	..do.....	194.8	100.4	95.8	40.4
336100	Aluminum and aluminum-base alloy).....	Million lbs.....	3.6	2.1	(D)	(D)
339100	Iron and steel forgings <sup>1</sup> .....	1,000 short tons.	51.6	18.6	21.2	7.9
351920	Diesel and semidiesel engines <sup>1</sup> .....	Number.....	(D)	(D)	(D)	(D)
362120	Integral horsepower electric motors and generators (1 hp. and over <sup>1</sup> .....	..do.....	(D)	(D)	(D)	(D)
	Bearings:					
356218	Ball.....	.....	(X)	43.6	(X)	15.2
356201	Roller.....	.....	(X)	43.6	(X)	15.2
970099	All other materials and components, parts, containers, and supplies consumed.....	.....	(X)	417.0	(X)	270.8
976000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> .....	.....	(X)	19.9	(X)	7.6

- Represents zero. (D) Included with material code 970099 "All other materials, etc." to avoid disclosing operations of individual companies.  
n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>No data are available for castings, iron and steel forgings, diesel and semidiesel engines or integral horsepower electric motors and generators produced and consumed at the same establishment except for iron castings which totaled 11,8 thousand short tons in 1963.

<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3742, these small establishments accounted for less than 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

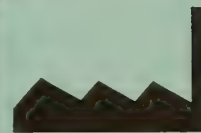
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MC67(P)-37C-5

## INDUSTRY SERIES

### Motorcycles, bicycles, and parts

SIC Code 3751

**preliminary  
report**

The Motorcycles, Bicycles, and Parts Industry includes establishments primarily engaged in manufacturing motorcycles, bicycles, and similar equipment and parts. Establishments primarily engaged in assembling motorcycles or bicycles from purchased parts are also included in this industry. Establishments primarily engaged in manufacturing children's vehicles, except bicycles, are classified in industry 3943.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Motorcycles, Bicycles, and Parts

Industry amounted to \$299.5 million, an increase of 55 percent compared with 1963. Value added by manufacture at \$136.1 million in 1967 was 66 percent more than value added in 1963. Average employment in the industry showed an increase of 24 percent from 1963 to a total of 12,0 thousand employees in 1967.

Of the \$300 million total value of shipments and other receipts of establishments classified as motorcycles, bicycles, and parts, \$28 million were products primary to other industries; and \$18 million were receipts for miscellaneous activities. The industry shipments of primary products represented 90 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 83 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture  (million dollars)	Cost of materials  (million dollars)	Value of shipments  (million dollars)	Capital expenditures, new  (million dollars)	End-of-year inventories  (million dollars)	Specialization ratio  (percent)	Coverage ratio  (percent)
	Total  (number)	With 20 employees or more (number)	Number  (1,000)	Payroll  (million dollars)	Number  (1,000)	Man-hours  (millions)	Wages  (million dollars)							
INDUSTRY 3751.-MOTORCYCLES, BICYCLES, AND PARTS														
1967 Census....	91	33	12.0	70.3	10.1	19.1	53.4	136.1	170.6	299.5	5.5	60.3	90	97
1966 ASM <sup>1</sup> .....	(NA)	(NA)	11.5	63.1	9.6	18.1	47.1	112.6	149.9	261.1	5.8	49.9	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	11.2	62.1	9.3	18.2	46.1	106.1	146.0	247.1	7.4	46.8	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	10.0	54.0	8.2	16.6	39.8	99.4	131.8	228.1	6.2	40.3	(NA)	(NA)
1963 Census....	88	33	9.7	48.4	7.9	15.2	34.4	82.2	112.2	192.9	3.2	36.0	83	93
1962 ASM <sup>1</sup> .....	(NA)	(NA)	9.0	42.9	7.3	14.0	30.1	74.2	102.9	172.6	3.3	34.5	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	8.2	38.2	6.6	12.8	26.9	59.2	93.6	153.1	2.6	27.5	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	8.3	37.5	6.7	12.6	26.7	61.2	84.6	143.1	3.1	27.6	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	8.7	38.7	7.1	13.8	28.6	67.0	86.5	149.7	3.3	25.4	(NA)	(NA)
1958 Census <sup>2</sup> ....	51	29	7.6	33.0	6.2	12.2	24.1	52.1	69.1	121.5	2.5	22.0	84	93

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued August 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE**    **Maurice H. Stans, Secretary**  
**Rocco C. Siciliano, Under Secretary**  
**BUREAU OF THE CENSUS**



The total value of motorcycles, bicycles, and parts shipped by all producers in 1967 was \$261.7 million of which \$254 million, or 97 percent, were shipped by plants classified in industry 3051, Motorcycles, Bicycles, and Parts, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 93 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
	INDUSTRY 3751.-MOTORCYCLES, BICYCLES, AND PARTS												
United States, total.....	91	33	12.0	70.3	10.1	19.1	53.4	136.1	170.6	299.5	5.5	9.7	82.2
Northeast.....	17	7	1.7	9.0	1.5	2.8	7.1	15.7	25.0	40.6	0.2	1.4	11.7
North Central.....	28	11	4.9	33.9	3.9	7.5	24.5	65.5	73.4	134.8	2.7	4.0	35.6
South.....	13	7	4.3	21.4	3.8	7.1	17.0	45.5	59.4	102.7	2.2	(D)	(D)
West.....	33	8	1.1	6.1	1.0	1.7	4.8	9.4	12.8	21.5	0.3	(D)	(D)

Note: Only those regions, divisions, or States are listed that could be shown without disclosing the operations of individual companies, either directly or by subtraction from higher-level totals. Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3751- --	MOTORCYCLES, BICYCLES, AND PARTS, TOTAL.....		(X)	261.7	(X)	163.4
37510 13	Motorcycles, including 3-wheel (excluding sidecars); trail vehicles, motorscooters and motorbikes.....	1,000 units....	44.5	33.3	33.4	19.7
37510 53	Parts for motorcycles (including sidecars); trail vehicles, motorbikes, and motorscooters, including bicycle engines (excluding motorbike parts which are interchangeable with bicycle parts).....		(X)	12.2	(X)	9.1
37510 61	Bicycles and parts: Bicycles, complete (excluding children's 2-wheel sidewalk cycles with semipneumatic tires).....	1,000 units....	4,813.6	142.0	3,811.2	96.6
357510 71	Parts for bicycles, including frame sets (including motorbike parts which are interchangeable with bicycle parts).....		(X)	33.1	(X)	23.0
37510 81	Self-propelled golf carts (electric and gasoline powered) for carrying passengers and/or industrial in-plant personnel carriers.....	1,000 units....	38.9	36.3	17.8	12.1
37510 00	Motorcycles, bicycles, and parts, n.s.k. (Represents principally establishments with 10 employees or more in 1967. See Note.).....		(X)	2.5	(X)	2.8
37510 02	Motorcycles, bicycles, and parts, n.s.k. (Represents principally establishments with fewer than 10 employees in 1967. See Note.).....		(X)	2.3		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(X) Not applicable. n.s.k. Not specified by kind.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3751.--MOTORCYCLES, BICYCLES AND PARTS					
	Materials, parts, containers, and supplies, total.....		(X)	152.8	(X)	102.7
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons..	132.0	22.3	3.5	0.7
331012	Sheet and strip.....	..do.....			79.2	12.1
331017	Wire and wire products.....	..do.....			6.3	1.1
331013	Plates.....	..do.....			0.4	0.1
331015	Structural shapes.....	..do.....			7.3	1.7
331019	All other carbon steel mill shapes and forms.....	..do.....				
331020	Alloy steel (except stainless).....	..do.....	0.3	0.2	1.2	0.3
331031	Stainless steel.....	..do.....			(Z)	(Z)
335121	Copper and copper-base alloy (brass mill shapes).....	Million lbs.....			(D)	(D)
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	..do.....	(NA)	4.0	0.2	0.1
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	..do.....				
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing etc.).....	..do.....				
332300	Steel castings (rough and semifinished) <sup>1</sup> .....	1,000 short tons..	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
339100	Iron and steel forgings <sup>1</sup> .....	..do.....	7.0	3.8	3.9	2.3
	Bearings:					
356218	Ball.....	.....	(X)	1.1	(X)	0.9
356201	Roller.....	.....				
970099	All other materials and components, parts, containers, and supplies consumed.....	.....	(X)	107.4	(X)	76.3
976000	Materials, parts, containers, and supplies, n.s.k. <sup>3</sup> .....	.....	(X)	12.6	(X)	7.0

(D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or from related figures. (NA) Not available. n.s.k. Not specified by kind.

(X) Not applicable. (Z) Less than 50 thousand of the unit specified.

<sup>1</sup>Excludes steel castings and steel forgings produced and consumed in the same establishment.

<sup>2</sup>The value for this material is included with material code 970099, "All other materials and components, parts, containers, and supplies consumed," to avoid disclosing operations of individual companies.

<sup>3</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3751, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# 1967 CENSUS OF MANUFACTURES



MC67(P)-37C-6

## INDUSTRY SERIES

### Trailer coaches

SIC Code 3791

## preliminary report

The Trailer Coaches Industry includes establishments primarily engaged in manufacturing trailer coaches (mobile dwellings) for attachment to passenger cars, and pickup coaches (campers) for mounting on pickup trucks.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Trailer Coaches Industry amounted to \$1,310.6 million, and increase of 84 percent compared with 1963. Value added by manufacture

at \$433.1 million in 1967 was 86 percent more than value added in 1963. Average employment in the industry showed an increase of 67 percent from 1963 to a total of 43.0 thousand employees in 1967.

Of the \$1,310.6 million total value of shipments and other receipts of establishments classified as trailer coaches, \$10.3 million were products primary to other industries; and \$14.0 million were receipts for miscellaneous activities. The industry shipments of primary products represented 99 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 98 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)
INDUSTRY 3791.--TRAILER COACHES														
1967 Census.....	853	436	43.0	235.0	36.9	72.2	178.2	433.1	879.5	1,310.6	19.7	115.7	99	99
1966 ASM <sup>1</sup> .....	(NA)	(NA)	38.6	199.3	32.5	61.7	147.1	354.9	771.9	1,089.3	9.8	93.7	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	35.8	179.5	30.0	58.1	132.8	332.1	704.1	1,032.7	12.6	78.4	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	32.7	161.4	27.6	55.7	122.4	286.6	632.9	929.8	9.6	66.5	(NA)	(NA)
1963 Census.....	413	252	25.7	125.0	21.9	43.4	94.1	232.5	482.8	713.1	9.6	63.1	98	99
1962 ASM <sup>1</sup> .....	(NA)	(NA)	21.1	97.7	17.9	31.3	73.9	153.2	356.8	507.6	*2.8	51.3	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	20.7	88.7	17.5	29.8	64.8	135.1	328.9	464.1	*3.7	47.5	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	22.3	94.0	18.6	34.3	68.2	158.2	366.1	523.8	*3.8	50.9	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	21.4	95.4	18.1	34.9	69.4	159.5	386.2	538.7	8.0	58.6	(NA)	(NA)
1958 Census <sup>2</sup> ....	386	209	18.7	77.1	16.0	30.6	59.0	127.7	332.1	461.1	7.7	47.4	99	99

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 2 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued September 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director



The total value of trailer coaches shipped by all producers in 1967 was \$1,290.9 million of which \$1,286.3 million, or 99+ percent, were shipped by plants classified in industry 3791, Trailer Coaches, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 99 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3791. --TRAILER COACHES												
United States, total.....	853	436	43.0	235.0	36.9	72.2	178.2	433.1	879.5	1,310.6	19.7	25.7	232.5
Middle Atlantic.....	46	27	3.5	19.3	3.0	6.1	14.9	39.6	74.8	113.9	(D)	1.6	13.8
East North Central....	224	111	11.7	72.3	9.7	18.8	53.4	126.7	271.3	397.4	3.3	9.4	93.4
Ohio.....	20	9	1.4	7.8	1.2	2.5	5.8	16.9	29.3	46.1	0.2	0.7	6.7
Indiana.....	115	67	6.4	43.3	5.3	9.9	31.6	73.5	171.4	244.6	2.2	4.2	44.8
Michigan.....	62	27	2.8	15.7	2.3	4.6	11.8	26.2	50.7	76.7	0.7	3.6	37.0
West North Central....	90	41	3.9	20.7	3.4	7.1	16.0	37.8	74.8	113.4	1.8	2.3	23.6
Kansas.....	34	19	1.9	10.7	1.6	3.5	8.0	19.5	38.0	58.1	1.5	1.1	13.5
South.....	240	139	13.8	67.2	12.0	23.5	51.1	133.6	276.5	409.3	10.2	5.8	49.5
South Atlantic:													
North Carolina....	12	10	0.9	4.2	0.8	1.5	3.1	8.0	19.9	27.9	0.2	0.4	2.3
South Carolina....	12	9	0.7	3.0	0.6	1.2	2.3	5.9	15.2	21.0	0.1	(D)	(D)
Florida.....	46	25	2.0	10.1	1.7	3.2	7.6	19.8	40.9	60.9	(D)	0.9	8.4
East South Central:													
Tennessee.....	12	4	0.4	1.4	0.4	0.8	1.2	2.9	5.1	7.9	(D)	(D)	(D)
West South Central..	86	41	3.4	16.0	3.0	5.6	12.2	30.6	61.3	92.3	1.9	1.7	13.6
Oklahoma.....	13	7	0.5	2.1	0.4	0.7	1.6	3.9	8.6	12.5	(D)	0.5	3.8
Texas.....	58	24	2.2	11.1	2.0	3.8	8.5	19.8	43.5	63.9	1.5	1.1	7.7
Mountain.....	69	26	1.9	9.5	1.7	3.2	7.3	16.2	34.1	50.5	0.4	1.0	7.3
Arizona.....	15	4	0.3	1.4	0.2	0.5	1.2	2.4	5.5	7.8	0.1	0.2	1.2
Pacific.....	176	91	8.1	45.8	7.0	13.4	35.2	78.7	147.3	225.1	3.0	5.6	44.7
Washington.....	11	5	0.3	1.6	0.3	0.5	1.3	2.4	5.9	8.0	0.1	0.2	1.0

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3791- --	TRAILER COACHES, TOTAL.....		(X)	1,290.9	(X)	690.3
	Trailer coaches 30 feet or more in length (mobile homes):					
37910 21	8 feet to 9 feet 11 inches in width.....	1,000 units...	14.1	53.4	15.4	60.2
37910 23	10 feet to 11 feet 11 inches in width.....	...do.....	31.5	117.5	119.3	449.1
37910 25	12 feet and over in width.....	...do.....	180.5	770.3	16.1	87.2
	Trailer coaches under 30 feet in length (recreation type coaches)					
37910 31	11 feet to 15 feet 11 inches in length.....	...do.....	26.2	30.1	12.9	12.6
37910 33	16 feet to 24 feet 11 inches in length.....	...do.....	47.3	103.8	21.7	38.3
37910 35	25 feet to 29 feet 11 inches in length.....	...do.....	12.2	50.9	4.8	14.0
37910 41	Pick up coaches (for mounting on trucks).....	...do.....	58.7	67.1	16.4	14.5
37910 00	Trailer coaches, n.s.k. (Represents principally establishments with 10 employees or more in 1967. See Note.).....		(X)	82.3	}	14.5
37910 02	Trailer coaches, n.s.k. (Represents principally establishments with fewer than 10 employees in 1967. See Note.).....		(X)	15.5		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind. (X) Not applicable.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
INDUSTRY 3791.--TRAILER COACHES						
	Materials, parts, containers, and supplies, total.....		(X)	871.2	(X)	471.9
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 tons.....	3.4	0.7	5.3	1.6
331012	Sheet and strip.....	..do.....	28.8	6.3	14.6	3.3
331015	Structural shapes.....	..do.....	(NA)	21.9	54.9	8.6
331019	All other carbon steel mill shapes and forms.....	..do.....	(NA)	1.2	8.3	1.3
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	..do.....	12.0	4.3	13.1	6.0
331029	All other alloy steel mill shapes and forms.....	..do.....				
331031	Stainless steel.....	..do.....				
	Copper and copper-base alloy:					
335728	Bare wire (electrical conduction only).....	Million lbs.....	(NA)	0.9	0.3	0.2
335790	Insulated wire and cable.....	Million lbs. (copper content).	11.2	6.1	4.8	3.5
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	..do.....	(NA)	0.1	0.1	(Z)
335123	Plate, sheet and strip (including military cups and discs)...	..do.....				
335127	Pipe and tube.....	..do.....				
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate and foil.....	..do.....	84.2	38.4	63.7	25.4
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.	..do.....	8.8	3.1	8.1	2.4
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welding tubing, etc.).....	..do.....	(NA)	1.4	2.0	2.2
	Castings (rough and semifinished): <sup>1</sup>					
332300	Steel.....	1,000 short tons.	(D)	(D)	1.0	0.5
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	(D)	(D)	0.4	0.3
243201	Plywood.....		(X)	79.0	(X)	50.4
242120	Dressed lumber.....	Million board ft.	416.0	45.1	251.7	26.0
229501	Coated, impregnated, and laminated fabrics.....	Million linear yards.....	(NA)	8.5	10.5	8.5
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	396.6	(X)	229.5
976000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> .....		(X)	251.4	(X)	100.8

(D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or from related figures. (NA) Not available. n.s.k. Not specified by kind.  
(X) Not applicable. (Z) Less than 0.1 when rounded.

<sup>1</sup>Excludes castings produced and consumed in the same establishment.

<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

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these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

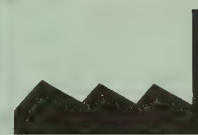
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

**preliminary  
report**

### Transportation equipment, n.e.c.

SIC Code 3799

The Transportation Equipment, Not Elsewhere Classified, Industry includes establishments primarily engaged in manufacturing transportation equipment, not elsewhere classified. Establishments primarily engaged in manufacturing industrial trucks, tractors, trailers, and stackers are classified in industry 3537, and children's vehicles, except bicycles, in industry 3943.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Transportation Equipment, N.E.C., Industry amounted to \$278.7 million, an increase

of 66 percent compared with 1963. Value added by manufacture at \$114.5 million in 1967 was 66 percent more than value added in 1963. Average employment in the industry showed an increase of 38 percent from 1963 to a total of 11,0 thousand employees in 1967.

Of the \$278.7 million total value of shipments and other receipts of establishments classified as transportation equipment, n.e.c., \$12.9 million were products primary to other industries; and \$10.0 million were receipts for miscellaneous activities. The industry shipments of primary products represented 95 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 89 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (per-cent)	Coverage ratio (per-cent)
	Total	With 20 employees or more (number)	Number	Payroll (million dollars)	Number	Man-hours (millions)	Wages (million dollars)							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)							
INDUSTRY 3799.--TRANSPORTATION EQUIPMENT, N. E. C.														
1967 Census.....	450	137	11.0	59.4	9.2	17.9	42.8	114.5	166.9	278.7	63	40.5	95	76
1966 ASM <sup>1</sup> .....	(NA)	(NA)	9.5	47.9	7.8	15.4	34.1	95.1	139.2	232.2	*5.0	33.7	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	8.6	43.1	7.0	14.5	30.5	81.0	135.1	214.4	*4.0	29.1	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	9.2	43.3	7.4	14.7	31.8	75.8	113.3	187.0	*2.1	29.2	(NA)	(NA)
1963 Census.....	522	108	8.0	37.5	6.7	13.2	27.8	68.8	99.4	167.4	3.7	26.3	89	75
1962 ASM <sup>1</sup> .....	(NA)	(NA)	5.8	28.1	4.7	9.2	18.5	45.2	78.3	123.0	*0.9	18.8	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	5.8	27.4	4.6	9.5	17.5	40.6	70.8	111.1	1.1	18.3	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	6.0	28.3	4.9	9.6	18.9	43.0	73.8	115.9	2.3	19.0	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	5.5	24.9	4.3	8.9	17.4	40.7	74.0	113.4	*2.3	17.6	(NA)	(NA)
1958 Census <sup>2</sup> ...	256	69	4.8	20.4	3.8	7.4	14.2	38.2	55.1	92.8	2.4	14.9	86	73

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 4 and 5, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director

The total value of transportation equipment, n.e.c., shipped by all producers in 1967 was \$337.1 million of which \$255.8 million, or 76 percent, were shipped by plants classified in industry 3799, Transportation Equipment, N.E.C., while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 75 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3799, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-35A, Farm Machinery and Equipment.

1967 CENSUS OF MANUFACTURES  
TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3799. --TRANSPORTATION EQUIPMENT, N. E. C.												
United States, total.....	450	137	11.0	59.4	9.2	17.9	42.8	114.5	166.9	278.7	6.3	8.0	68.8
New England.....	11	3	0.1	0.7	0.1	0.2	0.5	1.7	1.9	3.7	(D)	(D)	(D)
Middle Atlantic.....	35	8	0.8	4.9	0.6	1.3	3.6	10.4	12.5	23.2	(D)	(D)	(D)
East North Central....	115	45	3.7	21.5	3.1	5.9	15.2	38.8	61.0	99.2	1.8	2.0	17.8
Ohio.....	30	9	0.9	5.9	0.8	1.6	4.0	8.6	14.1	23.2	0.3	0.8	6.2
Indiana.....	28	15	1.0	6.3	0.8	1.7	4.5	11.0	19.8	30.8	0.7	0.6	7.1
Michigan.....	25	8	0.9	4.5	0.7	1.3	3.7	9.7	13.4	22.7	0.5	0.2	1.7
West North Central....	77	24	2.2	11.4	1.9	3.9	8.7	19.8	30.3	49.3	0.9	1.5	12.8
Iowa.....	21	8	0.7	3.6	0.5	1.1	2.6	5.2	7.2	12.4	(D)	0.7	5.3
Kansas.....	17	4	0.4	2.0	0.3	0.6	1.5	3.8	4.2	7.9	0.1	0.3	2.8
South.....	127	40	2.7	12.9	2.3	4.3	9.3	26.2	42.6	67.8	1.5	1.6	11.7
Georgia.....	12	5	0.4	1.6	0.3	0.6	1.2	3.4	5.8	9.2	0.2	(D)	(D)
West South Central..	61	19	1.1	4.6	0.9	1.8	3.7	9.1	15.4	24.2	0.7	3.0	6.2
Oklahoma.....	15	4	0.2	1.0	0.2	0.4	0.9	1.9	2.6	4.4	(D)	0.1	0.8
Texas.....	39	12	0.7	3.1	0.6	1.2	2.5	6.7	11.5	17.8	0.5	(D)	(D)
West.....	85	17	1.4	8.0	1.1	2.2	5.5	17.6	18.5	35.6	1.6	1.9	16.1
Arizona.....	5	1	0.1	0.3	0.1	0.1	0.2	0.4	0.7	1.2	(Z)	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000 units)	Value (million dollars)	Quantity (1,000 units)	Value (million dollars)
3799- --	TRANSPORTATION EQUIPMENT, N.E.C., TOTAL.....	(X)	337.1	(X)	190.4
37991 --	Automobile trailers, excluding housing type coaches.....	(X)	96.3	(X)	67.6
37991 21	Collapsible camping trailers and travel trailers less than 11 feet in length, complete units.....	66.7	45.4	73.2	60.1
37991 31	Other automobile trailers, excluding housing type coaches (commercial display, utility, camp etc.) complete units.....	43.0	36.9		
37991 51	Chassis for automobile trailers, sold separately.....	(NA)	12.0		
37991 00	Automobile trailers, excluding housing type coaches, n.s.k.....	(X)	1.9		
37992 --	Other transportation equipment.....	(X)	207.7	(X)	107.5
	Farm wagons, trucks, and other farm transportation equipment and parts:				
	As reported in the census of manufactures.....	(X)	64.4	(X)	45.8
	As reported on Census annual Form MA-35A.....	(X)	70.3	(X)	48.2
37992 13	Wagons and trucks (chassis only) and trailer gears:				
	2-wheel.....	3.2	0.6	2.1	0.4
	4-wheel.....				
37992 11	Under 4 ton capacity.....	37.5	6.2	92.3	12.2
37992 12	4 ton capacity and over.....	51.3	8.4		
37992 15	Boxes and racks for mounting on wagons, trucks, and trailer gears:				
	Manual unloading or dump.....	17.8	5.1	26.2	6.9
37992 16	Power unloading:				
	Grain type (cannot handle forage).....	8.2	2.7	11.4	3.1
	Forage type:				
37992 17	Rear unloading only.....	3.8	2.1	6.6	2.9
37992 18	Side unloading (with or without rear unloading).....	26.6	24.2	16.2	13.4
37992 20	Gravity unloading (grain type only).....	19.0	2.8	}	4.6
37992 24	Boxes with integral running gear:				
	Grain type (cannot handle forage).....	0.9	0.5		
37992 26	Forage type.....				
37992 19	Other farm transportation equipment (except equipment specified above).....	(X)	11.8	(X)	2.9
37992 21	Attachments.....	(X)	3.0		
37992 22	Parts.....	(X)	2.9		
37992 31	Handcarts and pushcarts, including parts and attachments.....	(X)	6.9	(X)	6.6
37992 53	Wheelbarrows.....	(NA)	9.3	1,200.1	8.2
37992 91	Boat trailers.....	<sup>e</sup> 238.1	34.2	97.3	13.9
37992 93	Self propelled snowmobiles (electric and gasoline driven) ski supported.	<sup>e</sup> 48.0	36.3	(X)	22.6
37992 98	Other miscellaneous transportation equipment.....	(X)	48.1		
37992 00	Miscellaneous transportation equipment, n.s.k.....	(X)	8.4		
37990 00	Transportation equipment, n.e.c., n.s.k. (Represents principally establishments with 10 employees or more in 1967. See Note.).....	(X)	22.2	(X)	15.3
37990 02	Transportation equipment, n.e.c., n.s.k. (Represents principally establishments with fewer than 10 employees in 1967. See Note.).....	(X)	10.9		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

<sup>e</sup>From 10 to 30 percent of this figure was estimated. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (\$1,000)	Quantity	Delivered cost (\$1,000)
	INDUSTRY 3799. --TRANSPORTATION EQUIPMENT, N. E. C.					
	Materials, parts, containers, and supplies, total.....		(X)	158.6	(X)	94.8
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	<sup>e</sup> 33.0	5.3	15.8	2.8
331012	Sheet and strip.....	..do.....	<sup>e</sup> 128.4	18.6	65.6	10.4
331013	Plates.....	..do.....	10.9	1.6	5.4	0.9
331015	Structural shapes.....	..do.....	(NA)	5.0	7.7	1.3
331017	Wire and wire products.....	..do.....	(NA)	0.9	2.4	0.8
331019	All other carbon steel mill shapes and forms.....	..do.....	5.1	1.5	8.1	1.9
331020	Alloy steel (except stainless).....	..do.....	} (NA)	3.6	{ 0.8	0.3
331031	Stainless steel.....	..do.....				
335121	Copper and copper-base alloy (Brass mill shapes).....	Million lbs.....	(NA)	0.8	0.4	0.4
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate and foil.....	..do.....	14.5	6.0	3.3	1.6
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	..do.....	(NA)	2.3	0.6	0.3
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing etc.).....	..do.....	1.3	1.0	0.1	(Z)
332300	Steel castings (rough and semifinished) <sup>1</sup> .....	1,000 short tons.	2.5	1.5	0.9	0.9
339100	Iron and steel forgings <sup>1</sup> .....	..do.....	0.4	0.2	0.2	0.2
	Bearings:					
356218	Ball.....	.....	(X)	0.4	(X)	0.3
356201	Roller.....	.....	(X)	0.7	(X)	0.4
970099	All other materials and components, parts, containers, and supplies consumed.....	.....	(X)	77.3	(X)	35.4
976000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> .....	.....	(X)	32.5	(X)	36.9

<sup>e</sup> From 10 to 30 percent of this figure was estimated. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.  
 (Z) Less than 0.1 when rounded.

<sup>1</sup> No data are available for steel castings or iron and steel forgings produced and consumed in the same establishment.

<sup>2</sup> This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3799, these small establishments accounted for approximately 4 percent of payrolls and 4 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

**U.S. DEPARTMENT OF COMMERCE  
BUREAU OF THE CENSUS  
WASHINGTON, D.C. 20233**

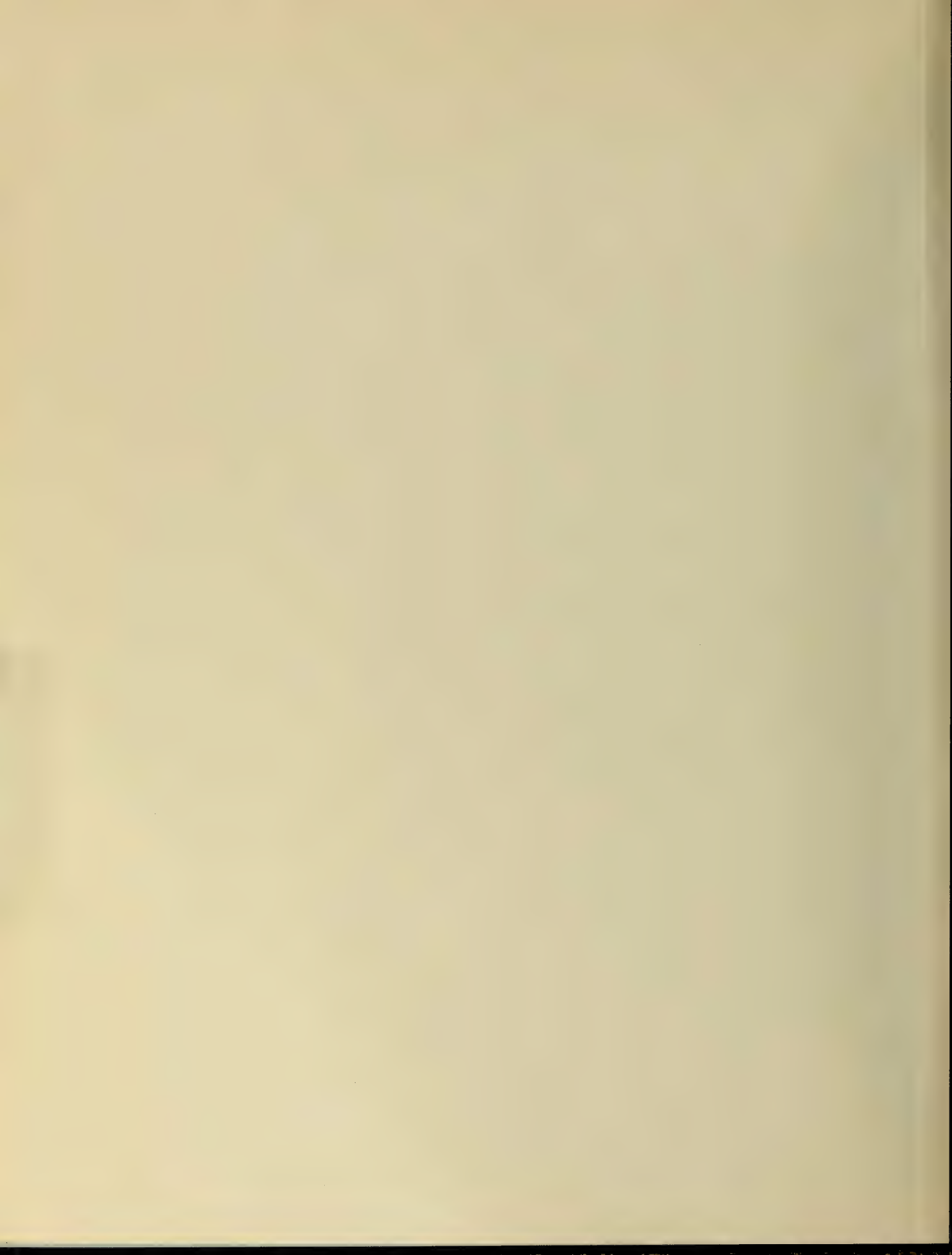
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**OFFICIAL BUSINESS**

**POSTAGE AND FEES PAID  
U.S. DEPARTMENT OF COMMERCE**



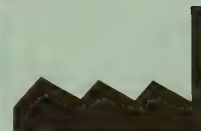






# 1967 CENSUS OF MANUFACTURES

MC67(P)-38A-1



INDUSTRY SERIES

**preliminary  
report**

## Engineering and scientific instruments

SIC Code 3811

The Engineering, Laboratory, and Scientific and Research Instruments and Associated Equipment Industry includes establishments primarily engaged in manufacturing laboratory, scientific, and engineering instruments such as nautical, navigational, aeronautical, surveying, drafting, and instruments for laboratory work and scientific research (except optical instruments--industry 3831). Establishments primarily engaged in manufacturing surgical and medical instruments are classified in industry 3841; dental instruments and equipment in industry 3843; mechanical measuring and controlling instruments in industry 3821; machinists' precision measuring tools in industry 3545; instruments for indicating, measuring, and recording electrical quantities and characteristics in industry 3611; watches and clocks in industry

3871; and measuring and dispensing pumps in industry 3586.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Engineering and Scientific Instruments Industry amounted to \$1,080.0 million, an increase of 95 percent compared with 1963. Value added by manufacture at \$681.5 million in 1967 was 90.1 percent more than value added in 1963. Average employment in the industry showed an increase of 44 percent from 1963 to a total of 47.2 thousand employees in 1967.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3811.--ENGINEERING AND SCIENTIFIC INSTRUMENTS														
1967 Census....	680	285	47.2	336.8	31.8	64.8	194.6	681.5	429.3	1,080.0	23.0	239.1	84	74
1966 ASM <sup>1</sup> .....	(NA)	(NA)	38.3	259.5	26.4	54.7	154.5	471.5	304.8	748.7	15.0	177.6	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	31.0	203.0	21.3	43.1	118.0	355.1	227.6	583.6	12.8	115.8	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	30.7	194.0	21.3	42.8	115.8	304.9	215.1	520.1	15.0	113.6	(NA)	(NA)
1963 Census....	594	213	33.1	208.2	22.2	44.6	119.8	358.6	200.0	553.9	16.2	122.1	84	56
1962 ASM <sup>1</sup> .....	(NA)	(NA)	51.0	313.2	35.1	71.1	194.8	503.5	236.8	748.9	28.7	330.9	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	68.1	453.6	44.5	88.8	244.4	687.7	386.0	1,097.6	27.2	279.5	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	72.9	469.4	46.9	97.2	261.4	742.8	427.9	1,116.0	29.4	292.3	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	72.8	461.5	49.2	103.0	273.7	729.5	416.8	1,133.7	21.0	278.4	(NA)	(NA)
1958 Census <sup>2</sup> ...	559	202	57.2	330.2	38.8	78.0	198.4	481.2	283.1	752.5	16.6	245.4	78	67

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 5 and 2, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued December 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

Harold C. Passer, Assistant Secretary for Economic Affairs

BUREAU OF THE CENSUS George Hay Brown, Director

Of the \$1,080.0 million total value of shipments and other receipts of establishments classified as engineering and scientific instruments, \$145.6 million were products primary to other industries; and \$147.4 million were receipts for miscellaneous activities. The industry shipments of primary products represented 84 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was also 84 percent in 1963.

The total value of engineering and scientific instruments shipped by all producers in 1967

was \$1,068.4 million of which \$787.0 million, or 74 percent, were shipped by plants classified in industry 3811, Engineering and Scientific Instruments, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 56 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3811, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-38B, Selected Instruments and Related Products.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)						
	INDUSTRY 3811.--ENGINEERING AND SCIENTIFIC INSTRUMENTS												
United States, total.....	680	285	47.2	336.8	31.8	64.8	194.6	681.5	429.3	1,080.0	23.0	33.1	358.6
Northeast.....	147	61	16.2	117.2	11.1	22.4	71.8	212.3	133.7	323.5	6.6	11.3	123.8
New Jersey.....	51	23	3.3	24.3	2.4	4.8	15.3	40.8	31.4	72.0	0.9	2.0	20.2
East North Central....	115	49	13.1	94.2	9.2	18.3	60.3	174.5	114.5	268.2	4.3	(D)	(D)
Ohio.....	26	10	0.8	4.5	0.5	1.0	2.6	9.9	6.0	15.7	0.2	0.3	3.3
Illinois.....	49	21	4.3	28.1	2.7	5.1	15.7	62.9	42.7	90.1	1.9	3.0	36.7
Michigan.....	21	10	5.5	44.6	4.1	7.9	31.7	72.3	45.9	114.5	1.6	4.5	50.9
West North Central....	7	5	1.0	7.8	0.6	1.4	3.9	14.2	8.0	21.9	1.3	(D)	(D)
South Atlantic.....	59	28	4.0	23.4	2.9	5.7	14.2	48.2	38.2	84.4	1.6	2.9	27.6
Maryland.....	16	9	1.0	7.0	0.6	1.3	4.0	9.9	8.5	17.9	0.2	0.8	7.4
Virginia.....	9	4	0.7	4.2	0.5	10.0	2.5	8.5	9.7	17.7	0.2	(D)	(D)
Florida.....	18	8	0.8	4.0	0.5	1.0	2.7	9.9	4.0	13.6	0.3	0.3	2.3
East South Central....	8	5	0.6	2.8	0.5	1.0	1.9	7.0	4.3	11.2	0.8	0.2	1.4
West South Central....	50	17	2.2	13.8	1.6	3.3	8.1	22.7	20.9	42.2	1.2	1.9	16.4
West.....	139	59	10.6	84.1	6.4	13.4	42.4	194.4	99.4	293.2	4.6	5.1	68.0

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000 units)	Value (million dollars)	Quantity (1,000 units)	Value (million dollars)
3811- --	ENGINEERING AND SCIENTIFIC INSTRUMENTS, TOTAL.....	(X)	1,068.4	(X)	722.1
38111 --	Aeronautical, nautical, and navigational instruments; and automatic pilots:				
	As reported in the census of manufactures.....	(X)	<sup>1</sup> 635.3	(X)	<sup>1</sup> 410.6
	As reported on Census Annual Form MA-38B.....	(X)	<sup>1</sup> 479.1	(X)	<sup>1</sup> 346.1
	Flight and navigation instruments:				
38111 01	Compasses (except radio).....	(NA)	33.3	89.9	3.5
38111 04	Omnibearing indicators (for visual-omni-range systems).....	(X)	( <sup>2</sup> )	(X)	( <sup>2</sup> )
38111 05	Radio magnetic indicators.....	(X)	( <sup>2</sup> )	(X)	( <sup>2</sup> )
38111 06	Glide slope indicators.....	(X)	( <sup>2</sup> )	(X)	( <sup>2</sup> )
38111 07	Pictorial deviation indicators.....	(X)	( <sup>2</sup> )	(X)	( <sup>2</sup> )
38111 08	Altimeters (except radio altimeters).....	(NA)	9.1	11.2	9.6
38111 09	Air speed indicators.....	(NA)	6.2	8.4	2.7
38111 11	Machmeters.....	(X)	( <sup>2</sup> )	(X)	( <sup>2</sup> )
38111 12	Acceleration indicators.....	(NA)	3.5	(X)	( <sup>2</sup> )
38111 13	Rate-of-climb indicators.....	6.8	4.0	6.2	0.9
38111 14	Driftmeters.....	(X)	( <sup>2</sup> )	(X)	( <sup>2</sup> )
38111 15	Angle-of-attack indicators.....	(X)	( <sup>2</sup> )	(X)	( <sup>2</sup> )
38111 16	Angle-of-yaw indicators.....	(X)	( <sup>2</sup> )	(X)	( <sup>2</sup> )
38111 17	Bank and turn indicators.....	30.9	42.8	(X)	(X)
38111 18	Horizon flight indicators.....			11.7	8.4
38111 19	Sextants.....	(X)	( <sup>2</sup> )	(X)	( <sup>2</sup> )
38111 20	Other flight and navigation instruments.....	(X)	<sup>2</sup> 11.2	(X)	<sup>2</sup> 13.0
	Gyroscopes (sold separately):				
38111 21	Vertical.....	19.5	20.0	13.6	25.8
38111 23	Directional.....	(NA)	4.0	3.9	2.9
38111 25	Free, torqued and untorqued.....	(NA)	9.5	5.5	10.9
38111 27	Rate.....	(NA)	24.7	34.9	24.7
38111 41	Integrating rate (nonfloated).....	(NA)	14.5	0.2	0.4
38111 43	Fully floated.....			7.7	24.5
38111 44	Complete automatic pilots (both gyroscopic and nongyroscopic).....	25.0	105.7	12.5	62.8
	Airframe equipment instruments:				
38111 61	Position indicators (mechanical, as for landing gear, cowl flaps, stabilizers, etc.).....	(X)	2.8	(X)	6.7
38111 62	Electrical system (ammeters, load meters, frequency meters, etc.)...	(X)	1.1	(X)	8.9
38111 63	Hydraulic system (both electrical and mechanical measuring means, as for liquid level and temperature and pressure indicators).....	(X)	3.0		
38111 64	Cabin air conditioning and heating (both electrical and mechanical means; indicators for differential pressure, air temperature, and air flow; and compressor tachometers).....	(X)	5.3		
	Regulating and controlling instruments:				
38111 71	Electrical (air combustion, air pressure, cabin pressure, etc.)....	(X)	( <sup>3</sup> )	(X)	( <sup>3</sup> )
38111 72	Mechanical (coolant, demand oxygen, oil pressure, etc.).....	(X)	20.0	(X)	19.5
38111 98	Other aeronautical; nautical; and navigational instruments.....	(X)	<sup>3</sup> 158.4	(X)	<sup>3</sup> 120.9
38111 00	Aeronautical, nautical, and navigational instruments, and automatic pilots, n.s.k.....	(X)	(X)	(X)	-
38112 --	Laboratory and scientific instruments:				
	As reported in the census of manufactures.....	(X)	216.3	(X)	195.1
	As reported on Census Annual Form MA-38B.....	(X)	207.8	(X)	186.1
38112 62	Electronic laboratory standards and calibrating equipment.....	(X)	12.7	(X)	2.8
38112 63	Electrical laboratory standards and calibrating equipment.....	(X)	7.3	(X)	6.1
38112 64	All other laboratory and scientific instruments, excluding aircraft, nautical, and navigational instruments and apparatus, electrical quantity measuring instruments, and industrial instruments.....	(X)	187.8	(X)	177.2
38113 --	Surveying and drafting instruments and laboratory furniture.....	(X)	174.1	(X)	104.1
38113 31	Surveying and drafting instruments and apparatus, except optical, (including surveying, transits, drawing instruments, drafting machines, slide rules, planimeters, integrators, etc.).....	(X)	44.0	(X)	23.3
38113 41	Photogrammetric equipment, including cameras.....	(X)	5.9	(X)	2.2
38113 71	Laboratory precision balances, including accessories, attachments, and parts.....	(X)	9.5	(X)	6.5

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000 units)	Value (million dollars)	Quantity (1,000 units)	Value (million dollars)
3811- --	ENGINEERING AND SCIENTIFIC INSTRUMENTS--Continued				
38113 --	Surveying and drafting instruments and laboratory furniture--Continued				
	Laboratory furniture:				
	Cabinets and cases:				
38113 81	Wood.....	(X)	56.6	(X)	31.8
38113 85	Metal.....	(X)	37.9	(X)	24.1
38113 89	Other (tables, stools, reagent shelves, etc.).....	(X)	14.1	(X)	13.0
38113 00	Surveying and drafting instruments and laboratory furniture, n.s.k.....	(X)	6.1	(X)	3.2
38110 00	Engineering and scientific instruments, n.s.k. (Represents primarily establishments with 10 employees or more in 1967. See Note.).....	(X)	34.5	(X)	12.3
38110 02	Engineering and scientific instruments, n.s.k. (Represents primarily establishments with fewer than 10 employees. See Note.).....	(X)	8.3		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digit) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

- Represents zero. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>The major difference between these two figures concerns the method of reporting parts and components for aircraft, flight, nautical and navigational instruments and automatic pilots. Whereas many respondents have included such items under the broad heading in the census, parts are not covered in the MA-38B survey.

<sup>2</sup>Included with 38111 20 to avoid disclosing figures for individual companies.

<sup>3</sup>Included with 38211 98 to avoid disclosing figures for individual companies.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3811.--ENGINEERING AND SCIENTIFIC INSTRUMENTS					
	Materials, parts, containers, and supplies, total.....		(X)	344.0	(X)	166.2
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	1.2	0.5	1.4	0.4
331012	Sheet and strip.....	..do.....	26.3	4.3	14.5	2.4
331013	Plates.....	..do.....	0.4	0.1	( <sup>1</sup> )	( <sup>1</sup> )
331015	Structural shapes.....	..do.....	0.6	0.2	0.4	0.1
331017	Wire and wire products.....	..do.....	} (NA)	1.0	( <sup>1</sup> )	( <sup>1</sup> )
331019	All other carbon steel mill shapes and forms.....	..do.....			14.6	10.8
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	..do.....	0.2	0.1	0.4	0.2
331029	All other alloy steel mill shapes and forms.....	..do.....	0.4	0.2	0.5	0.4
331031	Stainless steel.....	..do.....	3.2	4.3	1.3	1.9
	Copper and copper-base alloy:					
335728	Bar wire (for electrical conduction only).....	Million lbs.....	0.2	0.3	0.1	0.2
335790	Insulated wire and cable.....	Million lbs..... (copper content)	1.4	1.0	0.8	0.5
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	} 0.6	0.4	0.5	0.3
335123	Plate, sheet, and strip (including military cups and discs).	..do.....			0.1	0.1
335127	Pipe and tube.....	..do.....			0.2	0.1
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	..do.....	3.2	2.2	1.1	0.8
335205	Extruded shapes (including extruded rod, bar, pipe, tube, etc.).....	..do.....	0.7	0.6	0.4	0.3
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	..do.....	0.5	0.3	0.5	0.4
	Castings (rough and semifinished): <sup>2</sup>					
332300	Steel.....	1,000 short tons.	1.5	1.0	0.6	0.4
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	3.3	3.0	3.4	3.0
336200	Copper and copper-base alloy.....	..do.....	1.1	0.8	0.5	0.4
	Fractional horsepower electric motors (under 1 hp.): <sup>2</sup>					
362110	Timing motors, synchronous and subsynchronous.....	Millions.....	0.3	4.7	0.1	2.8
362115	Other fractional horsepower electric motors (excluding timing motors).....	..do.....	0.2	4.5	0.1	3.2
	Bearings:					
356218	Ball.....	.....	} (X)	2.1	(X)	2.2
356201	Roller.....	.....				
367101	Electron tubes, except X-ray <sup>2</sup> .....	Million units....	0.8	1.7	0.1	0.3
367408	Solid state semiconductors <sup>2</sup> .....	..do.....	9.4	5.3	4.6	3.7
281995	Silicon hyper pure.....	kilogram.....	} (X)	242.4	(X)	109.5
970099	All other materials and components, parts, containers, and supplies consumed.....	.....				
976000	Materials, parts, containers, and supplies, n.s.k. <sup>3</sup> .....	.....				
			(X)	62.5	(X)	31.8

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>For 1963, material codes 331013 and 331017 are combined with code 331019 to avoid disclosing the operation of individual companies.<sup>2</sup>No data are available for the quantities of castings, fractional horsepower electric motors, electron tubes or solid state semiconductors produced and consumed in the same establishment.<sup>3</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3811, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.

# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

**U.S. DEPARTMENT OF COMMERCE**  
**Bureau of the Census**  
Washington, D.C. 20233

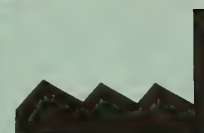
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# 1967 CENSUS OF MANUFACTURES



MC67(P)-38A-2

## INDUSTRY SERIES

**preliminary  
report**

### Mechanical measuring devices

SIC Code 3821

The Mechanical Measuring and Controlling Instruments, Except Automatic Temperature Controls Industry includes establishments primarily engaged in manufacturing industrial process instruments, for indicating, recording, measuring and controlling temperature (except automatic temperature controls, industry 3822), pressure and vacuum, fluid flow and liquid level, mechanical motion, rotation, humidity, density, acidity, alkalinity, and combustion; dial pressure gauges; physical property testing apparatus such as hardness, tension, compression, torsion, ductility, and elasticity testing apparatus.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Mechanical Measuring Devices Industry amounted to \$1,442.9 million, an increase of 26 percent compared with 1963. Value added by manufacture at \$970.4 million in 1967 was 32 percent more than value added in 1963. Average employment in the industry showed an increase of 15 percent from 1963 to a total of 71.9 thousand employees in 1967.

Of the \$1,442.9 million total value of shipments and other receipts of establishments classified as mechanical measuring devices, \$219.3 million were products primary to other industries; and \$147.9 million were receipts for miscellaneous activities. The industry shipments of primary products represented 83 percent of the total

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3821.--MECHANICAL MEASURING DEVICES														
1967 Census....	662	284	71.9	513.6	45.1	88.5	263.3	970.4	480.5	1,442.9	44.5	376.4	83	85
1966 ASM <sup>1</sup> .....	(NA)	(NA)	70.6	501.0	44.2	82.5	260.3	950.9	489.3	1,428.5	44.4	382.6	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	68.2	472.3	43.4	83.2	259.5	944.2	537.0	1,450.8	48.8	333.6	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	60.9	416.4	38.4	78.5	228.7	765.5	479.4	1,217.1	38.5	282.9	(NA)	(NA)
1963 Census....	670	258	62.4	388.9	40.4	81.5	222.8	732.5	415.9	1,143.4	30.9	256.5	80	83
1962 ASM <sup>1</sup> .....	(NA)	(NA)	65.1	376.2	41.3	85.6	205.4	674.0	406.9	1,073.8	29.6	247.4	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	60.1	340.3	37.0	73.9	176.7	591.0	377.8	965.4	25.1	233.3	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	59.7	340.5	37.5	76.7	183.6	600.0	365.2	948.7	24.4	226.7	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	52.8	288.4	34.5	66.8	158.4	536.0	301.0	824.7	(S)	199.9	(NA)	(NA)
1958 Census <sup>2</sup> ...	627	229	50.0	258.5	32.1	63.0	144.9	457.1	262.6	726.8	18.2	181.4	86	76

(NA) Not available.

(S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued December 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

Harold C. Passer, Assistant Secretary for Economic Affairs

BUREAU OF THE CENSUS George Hay Brown, Director

manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 80 percent in 1963.

called the coverage ratio, was 83 percent in 1963.

The total value of mechanical measuring devices shipped by all producers in 1967 was \$1,301.1 million of which \$1,075.7 million, or 85 percent, were shipped by plants classified in industry 3821, Mechanical Measuring Devices, while the remainder was shipped by plants classified in other industries. This percent,

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3821, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-38B, Selected Instruments and Related Products.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
INDUSTRY 3821.--MECHANICAL MEASURING DEVICES													
United States, total.....	662	284	71.9	513.6	45.1	88.5	263.3	970.4	480.5	1,442.9	44.5	62.4	732.5
New England.....	89	41	19.7	141.3	11.6	22.8	63.4	236.7	120.2	352.2	12.2	14.6	163.9
Connecticut.....	38	20	6.5	45.9	4.2	8.4	23.9	76.6	41.4	118.4	(D)	(D)	(D)
Middle Atlantic.....	187	92	23.5	173.2	15.4	30.0	96.7	316.8	165.0	482.7	15.1	20.8	258.0
North Central.....	174	72	18.9	132.0	11.3	22.3	64.4	274.4	124.2	399.5	11.8	19.9	253.7
Ohio.....	41	21	5.8	42.7	2.5	4.9	13.9	69.4	35.7	108.7	2.0	4.9	46.8
Illinois.....	52	23	8.2	55.0	5.5	10.7	30.1	134.2	51.1	183.0	6.6	6.7	86.3
Missouri.....	6	3	0.2	0.9	0.1	0.2	0.6	1.5	0.8	2.3	(Z)	0.1	1.0
South.....	88	33	3.8	20.8	2.8	4.9	13.1	50.1	30.0	76.6	2.6	(D)	(D)
Maryland.....	10	1	0.1	0.6	0.1	0.1	0.5	1.1	0.5	1.6	0.1	0.2	2.5
Florida.....	7	3	0.1	0.6	0.1	0.1	0.4	0.9	0.7	1.6	(Z)	(D)	(D)
Texas.....	34	16	1.2	7.6	0.8	1.5	4.8	21.8	13.3	33.8	(D)	0.5	7.4
West.....	124	46	6.1	46.3	4.0	8.5	25.7	92.4	41.0	131.8	2.8	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000 units)	Value (million dollars)	Quantity (1,000 units)	Value (million dollars)
3821- --	MECHANICAL MEASURING DEVICES, TOTAL.....	(X)	1,301.1	(X)	957.8
38211 --	Aircraft engine instruments, except flight:				
38211 10	As reported in the census of manufactures.....	(X)	99.5	(X)	66.4
	As reported on Census annual Form MA-38B.....	(X)	93.4	(X)	64.1
38211 45	Temperature indicators.....	(X)	9.5	(X)	5.8
38211 46	Pressure ratio indicators.....	(X)	7.9	(X)	2.4
38211 47	Pressure and vacuum indicators.....	(X)	7.5	(X)	4.3
38211 48	Flow indicators.....	(X)	21.2	(X)	9.5
38211 49	Liquid level indicators.....	(X)	24.4	(X)	24.9
38211 50	Tachometers.....	(X)	10.0		
38211 51	Thrust power indicators.....				
38211 52	Fuel mixture indicators.....				
38211 53	Fuel totalizers.....				
38211 54	Fuel densitometers.....	(X)	12.9	(X)	17.2
38211 55	Engine synchronizers.....				
38211 56	All other.....				
38212 --	Integrating meters, nonelectrical type:				
38212 00	As reported in the census of manufactures.....	(X)	189.1	(X)	163.7
	As reported on Census annual Form MA-38B.....	(X)	179.0	(X)	148.4
38212 11	Gas meters.....	1,396.5	57.7	1,558.3	56.5
38212 31	Water meters.....	1,203.1	70.4	1,351.3	60.9
38212 41	Gasoline dispensing meters.....	263.3	21.3	237.5	11.8
38212 98	Other nonelectrical integrating meters.....	189.7	19.9	237.9	19.2
38212 00	Integrating meters, nonelectrical type, n.s.k.....	(X)	9.7	(X)	-
38213 --	Industrial process instruments:				
38213 00	As reported in the census of manufactures.....	(X)	766.4	(X)	522.4
	As reported on Census annual Form MA-38B.....	(X)	722.2	(X)	473.1
	Temperature instruments:				
	Electrical and electronic measuring types (thermocouple, resistance thermometer, radiation, optical, etc.):				
38213 01	Direct-deflecting types (indicators, recorders and controllers for all types of temperature detectors).....	2,576.5	14.1		
38213 02	Self-balancing types (indicators, recorders, electric or pneumatic controllers and transmitters for thermocouple and resistance thermometer detectors).....				
38213 03	Self-balancing types (indicators, recorders, electric or pneumatic controllers and transmitters for radiation and optical type detectors).....	46.6	45.9		
	Mechanical measuring types:				
	Liquid in glass thermometers:				
38213 04	Process types.....	761.8	5.2	4,483.9	86.8
38213 05	Laboratory types.....	1,327.9	3.7		
38213 06	Bimetallic:				
	Over 2-1/2" dial.....	664.5	4.2		
38213 07	2-1/2" dial and smaller.....	138.3	0.5		
	Filled system:				
38213 08	Indicators only.....	1,426.3	10.8		
38213 09	Recorders, indicating or recording controllers, self-actuated controllers and transmitters with electric or pneumatic output.....	191.1	22.3		
38213 10	Pressure, draft and vacuum instruments:				
	Electrical and electronic measuring types, including indicators, recorders, controllers and transmitters with electric or pneumatic output.....	(X)	11.5	(X)	18.8
	Mechanical measuring types:				
38213 11	Indicators only.....	(X)	70.4	(X)	75.8
38213 12	Recorders, indicating or recording controllers, self-actuated controllers and transmitters with electric or pneumatic output.....	(X)	27.4		
38213 13	Flow and liquid level instruments (including indicators, recorders, controllers and transmitters with electric or pneumatic output):				
	Electromagnetic, capacitance and electronic types.....	(X)	18.6	(X)	9.4
38213 14	Differential pressure types (diaphragm, bellows, liquid seal, etc.).....	(X)	46.1		
38213 15	Other types, variable area, float and displacement, positive displacement, turbing, mass-flow, etc.....	(X)	31.7	(X)	57.8
38213 16	Humidity instruments (all types).....	(X)	6.0	(X)	4.0

See footnotes at end of table.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000 units)	Value (million dollars)	Quantity (1,000 units)	Value (million dollars)
3821- --	MECHANICAL MEASURING DEVICES--Continued				
38213 --	Industrial process instruments--Continued				
	As reported on Census annual Form MA-38B--Continued				
	Continuous process gas and liquid analysis instruments (on stream types only):				
38213 17	Chromatographic.....	(X)	8.6	(X)	12.6
38213 18	Other gas analysis types.....	(X)	22.2	(X)	10.2
38213 19	Other liquid analysis types.....	(X)	8.2		
	Instruments for all variables not listed above (speed, mechanical and electrical load, viscosity, position, density, specific gravity, sequence, time interval, millivolts, etc.):				
	Electrical and electronic measuring types, including indicators, recorders, controllers and transmitters with electric or pneumatic output:				
38213 20	Self-balancing types.....				
38213 21	Direct-deflecting types.....	(X)	16.0		
38213 22	Mechanical measuring types (including indicators, recorders, controllers, and transmitters with electric or pneumatic output...)	(X)	23.0		
	General purpose process display and control instruments which operate from standard transmitted signals:				
	Electrical and electronic types (a.c. or d.c. milliampere or millivolt or telemetering signals):				
38213 23	Indicators only.....	(X)	2.0		
38213 24	Blind controllers.....	(X)	8.1		
38213 25	Indicators with set-point stations, indicating controllers, integrators, recorders with or without self-contained set-point stations, recording controllers and separately-mounted set-point stations.....	(X)	22.8		
	Pneumatic types (3 to 15 and 3 to 27 p.s.i. standard signals):				
38213 26	Indicators only.....	(X)	2.3	(X)	( <sup>1</sup> )
38213 27	Blind controllers.....	(X)	5.1		
38213 28	Indicators with set-point stations, indicating controllers, integrators, recorders with or without self-contained set-point stations, recording controllers and separately-mounted set-point stations.....	(X)	20.7		
38213 29	Parts for process type instruments and control.....	(X)	79.0		
	Physical properties testing and inspection equipment, including harness, strength of materials, thickness, wear, abrasion, and similar testers excluding X-ray and nuclear):				
	Stress, strain, and flaw detecting and measuring equipment:				
38213 30	Electronic types.....	(X)	24.3	(X)	16.8
38213 31	Other types.....	(X)	7.4	(X)	7.3
	Other physical properties testing and inspection equipment:				
38213 54	Electronic types.....	(X)	13.6	(X)	6.0
38213 55	Other types.....	(X)	11.1	(X)	8.0
	Kinematic test and measuring equipment:				
38213 57	Vibration.....	(X)	19.3	(X)	20.8
38213 58	Acceleration and all other kinematic test and measuring equipment..	(X)	6.6	(X)	9.5
	Household type instrument:				
38213 33	Thermometers.....	28,791.0	13.5	14,272.6	8.9
38213 32	Barometers (all types).....	286.4	2.3	266.4	3.1
38213 34	Clinical thermometers.....	16,490.0	7.4	14,897.5	6.7
	All other industrial process instruments:				
38213 95	Electronic types.....	(X)	33.6	(X)	126.6
38213 97	Other types.....	(X)	46.7	(X)	178.0
38214 --	Motor vehicle instruments, except electric.....	(X)	71.4	(X)	769.8
38214 11	Speedometers for motor vehicles.....	(X)	59.6	(X)	41.0
38214 98	Other motor vehicle indicating instruments, except electric (fuel level oil pressure, etc.).....	(X)	11.1	(X)	27.4
38214 00	Motor vehicle instruments, except electric, n.s.k.....	(X)	0.7	(X)	0.6
38216 --	Other mechanical measuring and controlling instruments:				
38216 00	As reported in the census of manufactures.....	(X)	134.3	(X)	117.2
	As reported on Census annual Form MA-38B.....	(X)	126.7	(X)	107.5
38216 11	Nuclear radiation detection and monitoring instruments: Radiation detecting elements, including ion chambers, sold separately.....	(X)	3.4	15.3	2.9

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000 units)	Value (million dollars)	Quantity (1,000 units)	Value (million dollars)
2821- --	MECHANICAL MEASURING DEVICES--Continued				
38216 --	Other mechanical measuring and controlling instruments--Continued				
	As reported on Census annual Form MA-38B--Continued				
	Nuclear radiation detection and monitoring instruments--Continued				
	Nuclear monitoring instruments:				
	Portable (or handheld):				
38216 12	50 MR/HR Maximum range.....	(NA)	1.5	65.9	2.1
38216 13	50.1 MR/HR but less than 10 R/HR.....			328.6	5.9
38216 14	10 R/HR through 500 R/HR.....			11.6	0.7
38216 15	Environmental (fixed or semiportable or mobile systems for area monitoring but not handheld or worn on person).....	(NA)	0.9	(NA)	2.3
38216 16	Personal dosimetry devices, self-reading and others (worn on the person).....	(NA)	1.3	1,158.8	6.5
	Medical monitors:				
38216 17	Whole body counters.....	(X)	(2)	0.8	1.4
38216 18	Medical scanners and special purpose monitors.....				
38216 19	Scalers.....	2.4	2.5	3.4	3.0
38216 21	Special amplifiers for nuclear applications.....	(X)	(2)	1.1	1.2
	Pulse analyzers, including nuclear spectrometers:				
38216 22	Single channel pulse height analyzers.....	1.6	1.6	0.6	0.5
38216 23	Multichannel pulse height analyzers.....	0.8	6.7	0.7	6.7
38216 24	Sample changers.....	(X)	(2)	0.5	0.9
38216 25	Count rate meters.....	1.9	1.1	2.4	1.2
38216 26	Nuclear instruments for industrial purposes.....	2.0	14.2	2.1	5.0
38216 27	Miscellaneous, n.e.c.....	(X)	240.8	(X)	21.1
	Mechanical measuring instruments:				
38216 71	Revolution counters.....	(X)	52.7	1,570.3	11.4
38216 51	Other mechanical measuring instruments.....			(X)	34.7
38210 00	Mechanical measuring devices, n.s.k. (Represents establishment with 10 employers or more in 1967. See Note.).....	(X)	30.3	(X)	18.3
38210 02	Mechanical measuring devices, n.s.k. (Represents establishments with fewer than 10 employees in 1967. See Note.).....	(X)	10.1		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

- Represents zero. (NA) Not available. n.e.c. Not elsewhere classified. n.s.k. Not specified by kind. Revised. (X) Not applicable.

<sup>1</sup>Included with 38216 27 to avoid disclosing figures for individual companies.

<sup>2</sup>Included with codes 38213 95 and 38213 97 in 1963.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

Code	Material	Unit of measure	1967		1963		
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)	
	INDUSTRY 3821.--MECHANICAL MEASURING DEVICES						
	Materials, parts, containers, and supplies, total.....		(X)	409.2	(X)	358.3	
	Mill shapes and forms (except castings)						
	Carbon steel:						
331011	Bars and bar shapes.....	1,000 short tons.	17.0	5.4	12.7	3.5	
331012	Sheet and strip.....	..do.....	10.0	2.7	19.3	4.6	
331013	Plates.....	..do.....	2.3	0.6	3.5	0.7	
331015	Structural shapes.....	..do.....	3.8	0.8	1.4	0.4	
331017	Wire and wire products.....	..do.....	2.5	1.3	1.8	1.0	
331019	All other carbon steel mill shapes and forms.....	..do.....	1.9	1.2	2.3	1.6	
	Alloy steel (except stainless):						
331021	Bars and bar shapes.....	..do.....	0.7	0.6	0.4	0.4	
331029	All other alloy steel mill shapes and forms.....	..do.....	0.5	0.4	1.4	1.2	
331031	Stainless steel.....	..do.....	4.1	8.1	3.0	4.9	
	Copper and copper-base alloy:						
335728	Bare wire (for electrical conduction only).....	Million lbs.....	2.4	0.9	4.8	2.3	
335790	Insulated wire and cable.....	Million lbs. (copper content)	3.8	2.8			
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	13.7	5.1	10.3	4.7	
335123	Plate, sheet, and strip (including military cups and discs).. Pipe and tube.....	..do..... ..do.....	5.1 4.8	2.6 2.5	6.7 6.8	3.7 2.4	
	Aluminum and aluminum-base alloy:						
335202	Sheet, plate and foil.....	Million lbs.....	2.1	1.3	1.0	0.8	
335205	Extruded shapes, (including extruded rod, bar, pipe, tube, etc.).....	..do.....	0.9	0.8	1.0	1.0	
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	..do.....	2.5	1.4	4.1	2.6	
	Castings (rough and semifinished): <sup>1</sup>						
332300	Steel.....	1,000 short tons.	6.2	6.6	5.4	6.0	
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	20.7	17.6	17.0	12.5	
336200	Copper and copper-base alloy.....	..do.....	14.0	9.1	16.1	11.5	
	Fractional horsepower electric motors (under 1 hp. ): <sup>1</sup>						
362110	Timing motors, synchronous and subsynchronous.....	Million units....	0.7	6.0	0.2	3.2	
362115	Other fractional horsepower electric motors (excluding timing motors).....	..do.....	0.2	2.8	0.1	1.3	
	Bearings:						
356218	Ball.....	.....	(X)	1.4	(X)	0.8	
356201	Roller.....	.....	(X)	0.1	(X)	0.1	
367010	Electron tubes, except X-ray <sup>1</sup> .....	Million units....	1.1	1.8	1.8	2.5	
367408	Solid state semiconductors <sup>1</sup> .....	..do.....	4.7	6.9	2.5	4.8	
281995	Silicon, Hyper pure.....	10 Kilogram.....	}	(X)	250.9	(X)	231.6
970099	All other materials and components, parts, containers, and supplies consumed.....	.....					
976000	Materials, parts, containers and supplies, n.s.k. <sup>2</sup> .....	.....	(X)	67.5	(X)	48.2	

n.s.k. Not specified by kind. (X)Not applicable.

<sup>1</sup>No data are available on the quantities of castings, fractional horsepower electric motors, electron tubes, or solid state semiconductors produced and consumed in the same plant.<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3821, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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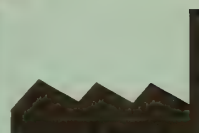
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OFFICIAL BUSINESS



# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

### Automatic temperature controls

SIC Code 3822

**preliminary  
report**

The Automatic Temperature Controls Industry includes establishments primarily engaged in manufacturing automatic temperature controls activated by pressure, temperature, level, flow, time, or humidity (including pneumatic controls) of the type principally used as components of air conditioning, refrigeration, and comfort heating, or as components of household appliances. Establishments primarily engaged in manufacturing industrial electric controls are classified in industry 3622.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Automatic Temperature Controls Industry amounted to \$609.8 million, an increase of 15.6 percent compared with 1963. Value added by manufacture at \$413.9 million in 1967 was 9.2 percent more than value added in 1963. Average employment in the industry showed a decrease of 2.8 percent from 1963 to a total of 30.8 thousand employees in 1967.

Of the \$609.8 million total value of shipments and other receipts of establishments classified as automatic temperature controls, \$129.8 million were products primary to other industries; and

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3822.--AUTOMATIC TEMPERATURE CONTROLS														
1967 Census....	105	54	30.8	208.0	22.1	44.1	129.1	413.9	191.4	609.8	13.1	123.3	78	91
1966 ASM <sup>1</sup> .....	(NA)	(NA)	32.6	215.8	23.1	46.8	136.6	439.3	198.9	628.5	20.1	138.8	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	32.7	209.9	23.2	47.5	133.7	414.6	189.7	595.5	13.6	122.7	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	32.6	200.6	22.7	45.2	122.1	401.8	160.7	550.6	10.2	109.2	(NA)	(NA)
1963 Census....	104	54	31.7	192.3	22.3	45.5	122.2	379.1	158.1	527.4	10.5	110.8	82	95
1962 ASM <sup>1</sup> .....	(NA)	(NA)	28.7	167.4	18.8	38.1	95.4	335.5	125.0	448.3	9.5	115.0	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	28.3	158.8	18.8	38.6	93.7	324.6	114.9	418.1	13.4	116.2	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	28.1	152.0	19.2	38.3	90.2	303.7	108.3	395.5	15.5	99.9	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	28.2	151.2	19.2	39.3	91.8	287.7	108.5	392.1	*13.9	83.3	(NA)	(NA)
1958 Census <sup>2</sup> ....	83	44	25.5	129.0	18.0	35.6	81.1	259.0	103.8	359.4	6.0	76.1	88	94

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**

\$11.8 million were receipts for miscellaneous activities. The industry shipments of primary products represented 78 percent of the total manufactured product shipments, primary and secondary. This percent called the specialization ratio for the industry, was 82 percent in 1963.

The total value of automatic temperature controls shipped by all producers in 1967 was \$512.1 million of which \$468.2 million, or 91 percent, were shipped by plants classified in industry 3822, Automatic Temperature Controls,

while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 95 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

#### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3822, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-38B, Selected Instruments and Related Products

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
	INDUSTRY 3822.—AUTOMATIC TEMPERATURE CONTROLS												
United States, total.....	105	54	30.8	208.0	22.1	44.1	129.1	413.9	191.4	609.8	13.1	31.7	379.1
New England.....	8	3	0.8	4.9	0.5	0.9	2.7	8.3	3.3	11.2	0.3	2.6	26.0
Middle Atlantic.....	24	10	2.5	17.2	1.9	3.7	11.6	27.6	13.7	41.6	0.5	2.6	25.7
North Central.....	41	26	22.3	152.1	15.6	31.0	91.3	317.9	147.8	469.6	9.8	20.0	258.4
Ohio.....	13	8	3.5	23.3	2.8	6.0	15.9	39.1	15.5	53.6	1.0	3.0	31.1
Illinois.....	9	5	6.9	47.3	4.5	8.7	26.1	110.2	39.1	152.1	2.7	5.6	76.6
South.....	15	6	1.1	5.6	0.9	1.8	4.2	9.9	4.9	14.7	0.4	(D)	(D)
Florida.....	6	2	0.2	0.8	0.2	0.3	0.6	1.5	0.7	2.2	(Z)	(D)	(D)
West.....	17	9	4.2	28.2	3.2	6.6	19.3	50.3	21.7	72.6	2.1	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (millions of units)	Value (million dollars)	Quantity (millions of units)	Value (million dollars)
3822- --	AUTOMATIC TEMPERATURE CONTROLS, TOTAL.....	(X)	512.1	(X)	431.6
	Automatic temperature controls of the type principally used as components of air-conditioning, refrigeration, and comfort heating, or as components of major household appliances, including pneumatic controls:				
38220 00	As reported in the census of manufactures.....	(X)	512.1	(X)	431.6
	As reported on Census Annual Form MA-38B.....	(X)	466.3	(X)	420.7
38220 12	Pressure sensitive controls.....	(X)	22.3	(X)	21.6
38220 14	Thermostatic controls.....	(X)	332.9	(X)	309.5
38220 16	Hydrostatic controls.....	}	111.1	(X)	89.6
38220 18	Other.....				

(X) Not applicable.



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity (millions of units)	Delivered cost (million dollars)	Quantity (millions of units)	Delivered cost (million dollars)
	INDUSTRY 3822.--AUTOMATIC TEMPERATURE CONTROLS					
	Materials, parts, containers, and supplies, total.....		(X)	171.2	(X)	141.8
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	5.6	2.2	3.6	1.6
331012	Sheet and strip.....	..do.....	23.8	5.0	20.1	5.0
331013	Plates.....	..do.....	9.4	5.8	0.4 0.9 1.5	0.1 0.5 1.0
331015	Structural shapes.....	..do.....				
331017	Wire and wire products.....	..do.....				
331019	All other carbon steel mill shapes and forms.....	..do.....				
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	..do.....	2.3	3.7	0.2 0.3	0.3 0.4
331029	All other alloy steel mill shapes and forms.....	..do.....				
331031	Stainless steel.....	..do.....			2.2	3.7
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction only).....	Mil. lbs.....	(D)	(D)	0.3	0.3
335790	Insulated wire and cable.....	Mil. lbs. (copper content)	(D)	(D)	2.3	1.7
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Mil. lbs.....	10.0	6.1	14.2	6.3
335123	Plate, sheet, and strip (including military cups and discs).	..do.....	5.4	3.7	5.4	3.6
335127	Pipe and tube.....	..do.....	5.5	5.1	4.1	3.6
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate and foil.....	..do.....	8.5	3.3	1.1 2.3 4.7	0.8 1.5 1.2
335205	Extruded shapes (including extruded rod, bar, pipe, tube, etc.).....	..do.....				
335209	All other aluminum mill shapes and forms, (wire, rolled rod and bar, powder, welded tubing, etc.).....	..do.....				
	Castings (rough and semifinished):					
332300	Steel.....	1,000 short tons.	(D)	(D)	0.7	0.5
336100	Aluminum and aluminum-base alloy.....	Mil. lbs.....	7.6	4.8	7.8	5.1
336200	Copper and copper-base alloy.....	..do.....	11.0	5.6	5.3	2.5
	Fractional horsepower electric motors (under 1 hp.):					
362110	Timing motors, synchronous and subsynchronous.....	Number.....	5.2	4.3	3.5 (Z)	2.7 0.4
362115	Other fractional horsepower electric motors (excluding timing motors).....	..do.....				
	Bearings:					
356218	Ball.....		-	(Z)	(X)	0.1
356201	Roller.....		-	-		
367010	Electron tubes, except X-ray.....	Mil. units.....	(D)	(D)	(D)	(D)
367408	Solid state semiconductors.....	..do.....	(D)	(D)	(D)	(D)
281995	Silcon, hyper pure.....	1 kilogram.....	-	-	(NA)	(NA)
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	<sup>1</sup> 116.3	(X)	95.8
976000	Materials, parts, containers, and supplies, n.s.k.....		(X)	5.3	(X)	3.1

- Represents zero. (D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or from related figures.

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable. (Z) Less than 0.1 when rounded.

<sup>1</sup> Includes the cost of those materials for which the symbol "D" appears.

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3822, these small establishments accounted for less than 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

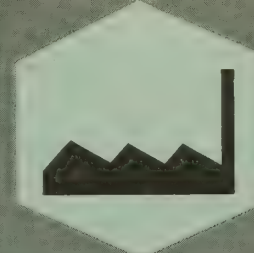
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

**preliminary  
report**

### Optical instruments and lenses

SIC Code 3831

The Optical Instruments and Lenses Industry includes establishments primarily engaged in the production of optical lenses and prisms, and in manufacturing optical instruments such as microscopes, telescopes, field and opera glasses; and optical measuring and testing instruments such as refractometers, spectrometers, spectroscopes, colorimeters, polariscopes. Establishments primarily engaged in manufacturing eyeglass lenses, frames, or fittings are classified in industry 3851; and those engaged in manufacturing sighting and fire control instruments, but not engaged in manufacturing optical components, in industry 1941.

The classification of establishments for which data are tabulated in this report is based upon the

definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Optical Instruments and Lenses Industry amounted to \$392.2 million, an increase of 100.1 percent compared with 1963. Value added by manufacture at \$274.6 million in 1967 was 108.2 percent more than value added in 1963. Average employment in the industry showed an increase of 68.9 percent from 1963 to a total of 20.1 thousand employees in 1967.

Of the \$392.2 million total value of shipments and other receipts of establishments classified as optical instruments and lenses, \$73.7 million were products primary to other industries; and

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)
INDUSTRY 3831.—OPTICAL INSTRUMENTS AND LENSES														
1967 Census....	301	107	20.1	157.5	13.0	27.1	84.4	274.6	125.5	392.2	15.7	88.8	80	72
1966 ASM <sup>1</sup> .....	(NA)	(NA)	17.4	131.7	10.8	22.7	70.2	225.5	119.2	332.4	12.9	85.4	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	15.7	116.5	10.2	21.6	65.3	205.4	94.0	291.4	7.8	71.3	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	15.1	104.0	9.8	19.7	58.0	176.9	80.4	253.4	6.3	59.4	(NA)	(NA)
1963 Census.....	280	79	11.9	79.1	8.3	16.7	47.1	131.9	66.6	196.0	6.2	43.0	90	61
1962 ASM <sup>1</sup> .....	(NA)	(NA)	8.3	59.0	5.9	12.0	33.8	83.8	46.5	134.2	8.2	27.7	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	7.9	51.2	5.4	10.7	29.1	65.7	37.9	103.4	8.6	27.0	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	8.0	51.1	5.7	11.6	30.6	79.4	49.1	124.2	3.6	23.2	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	8.7	50.7	6.6	13.8	31.7	81.5	56.4	134.8	(S)	28.3	(NA)	(NA)
1958 Census <sup>2</sup> ...	224	58	7.2	37.6	5.1	10.5	23.5	60.4	42.7	103.0	3.4	22.0	90	66

(NA) Not available.

(S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

Harold C. Passer, Assistant Secretary for Economic Affairs

BUREAU OF THE CENSUS George Hay Brown, Director



\$21.6 million were receipts for miscellaneous activities. The industry shipments of primary products represented 80 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 90 percent in 1963.

The total value of optical instruments and lenses shipped by all producers in 1967 was \$418.6 million of which \$296.9 million, or 72 percent, were shipped by plants classified in

industry 3821, Optical Instruments and Lenses, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 61 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 3831, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-36B, Selected Instruments and Related Products.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3831.--OPTICAL INSTRUMENTS AND LENSES													
United States, total.....	301	107	20.1	157.5	13.0	27.1	84.4	274.6	125.5	392.2	15.7	11.9	131.9
New England.....	35	15	5.6	52.7	3.3	6.8	25.4	88.8	33.9	120.4	4.9	3.6	47.2
Middle Atlantic.....	116	44	4.7	34.3	3.6	7.3	22.7	57.7	31.6	86.6	1.8	4.0	37.1
New York.....	67	27	3.7	27.8	2.8	5.7	18.4	46.3	25.1	69.0	1.4	3.1	28.2
New Jersey.....	24	4	0.2	1.8	0.2	0.3	1.0	3.6	2.1	5.7	0.1	0.2	1.7
Pennsylvania.....	25	13	0.7	4.6	0.6	1.2	3.3	7.8	4.4	11.9	0.3	0.7	7.3
North Central.....	45	11	1.4	9.5	1.0	1.9	5.6	18.2	9.0	26.1	2.1	1.4	13.3
East North Central..	36	11	1.3	9.2	0.9	1.8	5.3	17.5	8.6	25.0	2.1	1.1	10.4
Illinois.....	18	7	0.8	5.4	0.5	1.0	2.8	10.3	5.2	15.1	(D)	0.7	7.1
South.....	26	9	1.5	7.2	1.2	2.5	5.2	19.2	6.6	24.9	1.0	0.8	8.5
South Atlantic.....	18	4	0.3	1.8	0.2	0.4	1.2	3.1	1.4	4.5	0.2	(D)	(D)
Maryland.....	8	3	0.2	1.3	0.1	0.3	0.9	2.6	0.9	3.4	0.2	(D)	(D)
West.....	79	28	6.9	53.8	3.9	8.7	25.5	90.7	44.4	134.3	5.9	2.1	25.8
California.....	67	27	6.8	53.3	3.9	8.6	25.2	90.0	44.0	133.2	(D)	2.0	25.0

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (number of units)	Value (million dollars)	Quantity (number of units)	Value (million dollars)
3831- --	OPTICAL INSTRUMENTS AND LENSES, TOTAL.....	(X)	418.6	(X)	269.5
	Optical instruments and lenses, except sighting and fire control equipment:				
38311 00	As reported in the census of manufactures.....	(X)	355.3	(X)	212.8
	As reported on census annual Form MA-38B.....	(X)	333.5	(X)	199.2
	Optical:				
38311 31	Field glasses, prismatic and nonprismatic, terrestrial and celestial telescopes.....	(X)	( <sup>1</sup> )	(X)	2.6
38311 51	Microprojectors and photomicrographic equipment.....	(X)	( <sup>1</sup> )	(X)	
	Microscopes:				
38311 52	Electron and proton.....	(X)	32.1	(X)	32.3
38311 54	Optical.....			(X)	
38311 74	Optical and related types of spectrometers.....	(X)	76.4	(X)	50.4
	All other optical instruments:				
38311 76	Electrophoresis equipment.....	(X)	( <sup>1</sup> )	(X)	(X)
38311 80	All other optical instruments including refractometers, meteorology instruments, and other optical instruments used for laboratory and measuring purposes.....	(X)	<sup>1</sup> 120.8	(X)	70.9
	Laboratory analysis apparatus (nonoptical):				
38311 71	Mass spectrographs.....	(X)	5.4	(X)	5.1
38311 73	Nuclear magnetic resonance type apparatus.....	(X)	58.7	(X)	( <sup>2</sup> )
38311 75	Electron paramagnetic spin type apparatus.....			(X)	( <sup>2</sup> )
38311 77	Chromatographic equipment (excluding continuous (on stream) gas and chemical analysis types).....			(X)	5.5
38311 79	All other nonoptical analytical instruments and equipment (photometers, colorimeters, turbidimeters, nephelometers, titrometers, PH meters, etc.).....			(X)	<sup>2</sup> 32.4
38311 98	Lenses, components, and parts.....	(X)	40.1	(X)	
	Sighting and firecontrol equipment made from lenses, prisms, etc., produced at the same establishment:				
38312 00	As reported in the census of manufactures.....	(X)	51.3	(X)	51.1
	As reported on census annual Form MA-38B.....	(X)	47.9	(X)	49.8
38312 62	Sighting, tracking, and fire-control equipment (optical type), made from lenses, prisms, etc., produced in the same plant.....	(X)	47.9	(X)	(X)
38310 00	Optical instruments and lenses, n.s.k. (Represents establishments with 10 employees or more in 1967. See Note.).....	(X)	7.3	(X)	5.7
38310 02	Optical instruments and lenses, n.s.k. (Represents establishments with fewer than 10 employees in 1967. See Note.).....	(X)	4.8		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Included with 38311 80 to avoid disclosing figures for individual companies.

<sup>2</sup>Included with 38311 79 to avoid disclosing figures for individual companies.

## 1967 CENSUS OF MANUFACTURES

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3831.--OPTICAL INSTRUMENTS AND LENSES					
	Materials, parts, containers, and supplies, total.....		(X)	105.1	(X)	53.1
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	1.6	3.0	1.3	1.6
331017	Wire and wire products.....	..do.....				
331019	All other carbon steel mill shapes and forms.....	..do.....				
331021	Alloy steel (except stainless):					
331029	Bars and bar shapes.....	..do.....				
331031	All other alloy steel mill shapes and forms.....	..do.....				
	Stainless steel mill shapes and forms.....	..do.....				
	Aluminum and aluminum-base alloy:					
335205	Extruded shapes (including extruded rod, bar, pipe, tube, etc.).....	..do.....	1.3	1.3	0.5	0.4
335209	All other aluminum mill shapes and forms, (wire rolled rod and bar, powder, welded tubing, etc.).....	..do.....	0.1	0.2	(Z)	(Z)
	Castings (rough and semifinished):					
332011	Iron (gray and malleable).....	1,000 short tons.	3.0	0.3	(D)	(D)
332300	Steel.....	..do.....	(D)	(D)	(D)	(D)
336100	Aluminum and aluminum-base alloy.....	Mil. lbs.....	4.5	3.6	0.5	0.8
336200	Copper and copper-base alloy.....	..do.....	(Z)	(Z)	(D)	(D)
970099	All other materials, and components, parts, containers, and supplies consumed.....		(X)	72.4	(X)	35.0
976000	Materials, parts, containers, and supplies, n.s.k.....		(X)	25.1	(X)	15.3

(D) Included with material code 970099 "all other materials, etc." to avoid disclosing operations of individual companies.  
n.s.k. Not specified by kind. (X) Not applicable. (Z) Less than 0.1 when rounded.



### SCOPE AND COVERAGE

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The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

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In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3831, these small establishments accounted for approximately 0.8 percent of payrolls and 1.2 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

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More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

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# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

# 1967 CENSUS OF MANUFACTURES

INDUSTRY SERIES

## Surgical and medical instruments

SIC Code 3841

preliminary  
report

The Surgical and Medical Instruments and Apparatus Industry includes establishments primarily engaged in manufacturing medical, surgical, ophthalmic, and veterinary instruments and apparatus. Establishments primarily engaged in manufacturing surgical and orthopedic appliances are classified in industry 3842; and electrotherapeutic, electromedical, and X-ray apparatus in industry 3693.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Surgical and Medical Instruments

Industry amounted to \$439 million, an increase of 55 percent compared with 1963. Value added by manufacture at \$277 million in 1967 was 65 percent more than value added in 1963. Average employment in the industry showed an increase of 41 percent from 1963 to a total of 21.3 thousand employees in 1967.

Of the \$439 million total value of shipments and other receipts of establishments classified as surgical and medical instruments, \$49 million were products primary to other industries; and \$46 million were receipts for miscellaneous activities. The industry shipments of primary products represented 88 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was also 88 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)
INDUSTRY 3841.—SURGICAL AND MEDICAL INSTRUMENTS														
1967 Census....	317	136	21.3	133.9	15.8	31.8	79.9	277.4	174.0	439.3	18.0	97.8	88	77
1966 ASM <sup>1</sup> .....	(NA)	(NA)	17.6	108.3	13.4	26.8	64.4	228.2	141.5	360.1	13.4	76.9	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	15.4	89.4	11.3	22.5	52.6	188.3	112.0	297.8	10.9	59.9	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	14.7	83.0	11.1	21.9	50.8	165.7	131.8	296.6	6.2	55.6	(NA)	(NA)
1963 Census....	294	117	15.1	83.3	11.5	22.9	52.5	168.6	126.9	284.0	10.5	54.1	88	74
1962 ASM <sup>1</sup> .....	(NA)	(NA)	12.4	67.0	9.2	18.2	40.8	129.2	93.8	216.7	6.8	41.9	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	11.7	61.6	8.9	17.6	38.8	107.0	74.0	181.5	4.8	33.4	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	11.6	58.1	8.8	17.6	36.8	96.8	64.2	159.6	4.4	32.7	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	10.2	50.4	7.7	15.4	31.5	84.3	57.9	142.0	2.5	31.0	(NA)	(NA)
1958 Census <sup>2</sup> ...	231	88	10.3	44.9	8.1	16.2	31.0	85.2	48.9	130.5	2.8	30.6	83	76

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 3 and 3, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued August 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents



U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary  
Rocco C. Siciliano, Under Secretary  
William H. Chartener, Assistant Secretary for Economic Affairs  
BUREAU OF THE CENSUS A. Ross Eckler, Director

The total value of surgical and medical instruments shipped by all producers in 1967 was \$446 million of which \$345 million, or 77 percent, were shipped by plants classified in industry 3841, Surgical and Medical Instruments, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 74 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

1967 CENSUS OF MANUFACTURES  
TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)						
INDUSTRY 3841.—SURGICAL AND MEDICAL INSTRUMENTS													
United States, total.....	317	136	21.3	133.9	15.8	31.8	79.9	277.4	174.0	439.3	18.0	15.1	168.6
Northeast.....	133	65	10.1	67.0	7.5	15.0	37.1	115.4	83.9	193.8	7.5	7.2	63.3
New York.....	53	25	2.8	17.6	2.2	4.4	11.4	36.6	19.6	55.0	2.8	2.5	22.3
Pennsylvania.....	16	11	0.9	5.5	0.7	1.4	3.6	9.3	7.3	16.1	0.3	(D)	(D)
East North Central....	63	31	3.2	20.5	2.4	5.0	13.6	48.0	29.9	74.7	2.0	2.9	32.0
Ohio.....	16	9	0.7	3.6	0.5	1.1	2.4	7.6	4.4	11.8	0.5	0.6	6.3
Illinois.....	23	13	1.1	7.5	0.7	1.5	4.7	12.0	8.8	20.8	(D)	1.2	10.1
West North Central....	22	8	1.9	10.9	1.6	3.2	8.0	33.5	19.1	51.8	3.7	1.7	22.6
South.....	42	15	2.9	14.5	2.2	4.4	9.4	34.6	17.5	51.2	2.2	1.1	16.9
Mountain.....	6	1	0.1	0.3	0.1	0.1	0.1	0.5	0.5	1.0	(D)	(Z)	(Z)
Pacific.....	51	16	3.1	20.8	2.0	4.1	11.7	45.3	23.1	66.8	(D)	2.1	33.5

Note: Only those regions, divisions, or States are listed that could be shown without disclosing the operations of individual companies, either directly or by subtraction from higher-level totals. Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$500 thousand.



**TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963**

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3841- --	SURGICAL AND MEDICAL INSTRUMENTS, TOTAL.....		(X)	446.0	(X)	290.6
38410 12	Surgical instruments, including suture needles, and eye, ear, nose, and throat instruments.....		(X)	35.1	(X)	22.3
38410 31	Orthopedic instruments, such as bone drills, bone plates, etc., excluding eye, ear, nose, and throat instruments.....		(X)	6.8	(X)	8.1
38410 51	Diagnostic apparatus, including such items as metabolism and blood pressure apparatus, ophthalmoscopes, octoscopes, cystoscopes, etc.....		(X)	39.5	(X)	19.2
38410 63	Hypodermic syringes: Reusable.....	Million units.	4.8	8.4	7.9	11.6
38410 66	Disposable: Uniquely designed for prefilling.....	..do.....	250.6	15.4	115.9	11.3
38410 68	Other.....	..do.....	(NA)	29.1	389.2	25.1
38410 73	Hypodermic needles: Reusable.....	..do.....	(NA)	4.1	30.6	5.4
38410 75	Disposable.....	..do.....	1,712.8	42.4	834.1	27.5
38410 83	Anesthesia apparatus and oxygen tents.....		(X)	24.6	(X)	82.3
38410 85	Other surgical and medical instruments, including transfusion equipment, blood donor kits, veterinary instruments.....		(X)	129.9	(X)	
38410 91	Operating room furniture, including tables, cases, cabinets, etc..		(X)	22.8	(X)	18.0
38410 93	Patient room furniture, including cabinets, overbed tables, desks, dressers, etc., but excluding beds and chairs.....		(X)	27.4	(X)	
38410 96	Other hospital furniture, excluding operating and patient room furniture, beds and instruments, but including cases, tables, bassinets, chartracks, backrests, etc.....		(X)	37.3	(X)	49.8
38410 00	Surgical and medical instruments, n.s.k. (represents establishments with 10 employees or more in 1967. See Note.)....		(X)	17.6	(X)	
38410 02	Surgical and medical instruments, n.s.k. (represents establishments with fewer than 10 employees in 1967. See Note.)..		(X)	5.5	(X)	9.9

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figures is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

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(NA) Not available. (X) Not applicable.

**TABLE 4. Materials Consumed, by Kind: 1967 and 1963**

(Not applicable to this report)

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## Appendix

### EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

**Textile mill products • Apparel and leather • Chemicals, rubber, and plastics • Machinery and equipment • Primary metals • Intermediate metal products • Processed foods • Lumber, furniture, and paper products • Stone, clay, and glass products.**

A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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**U. S. DEPARTMENT OF COMMERCE**  
**Bureau of the Census**

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**WASHINGTON, D.C. 20233**

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# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

### Surgical appliances and supplies

SIC Code 3842

## preliminary report

The Orthopedic, Prosthetic, and Surgical Appliances and Supplies Industry includes establishments primarily engaged in manufacturing orthopedic, prosthetic, and surgical appliances and supplies, arch supports, and other foot appliances; fracture appliances, elastic hosiery, abdominal supporters, braces, and trusses; bandages; surgical gauze and dressings; sutures; adhesive tapes and medicated plasters; and personal safety appliances and equipment. Establishments primarily engaged in manufacturing surgical and medical instruments are classified in industry 3841. Establishments primarily engaged in manufacturing appliances and in the personal fitting to the individual prescription of a physician are classified in trade industries.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Surgical Appliances and Supplies Industry amounted to \$871.3 million, an increase of 46 percent compared with 1963. Value added by manufacture at \$547.5 million in 1967 was 48 percent more than value added in 1963. Average employment in the industry showed an increase of 29 percent from 1963 to a total of 36.5 thousand employees in 1967.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3842.—SURGICAL APPLIANCES AND SUPPLIES														
1967 Census....	813	214	36.5	227.8	25.5	49.9	130.2	547.5	338.7	871.3	31.4	163.4	78	90
1966 ASM <sup>1</sup> .....	(NA)	(NA)	34.7	206.3	23.7	47.4	106.9	467.4	314.4	768.9	24.7	143.3	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	31.6	193.3	21.3	42.3	101.6	418.3	268.9	680.4	17.3	114.9	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	28.4	168.4	19.0	38.3	88.8	379.6	245.9	622.6	18.4	102.5	(NA)	(NA)
1963 Census.....	704	162	28.3	161.8	19.0	37.9	85.8	370.3	230.1	596.7	17.8	100.2	80	90
1962 ASM <sup>1</sup> .....	(NA)	(NA)	28.9	175.9	17.6	35.1	78.4	365.9	230.8	583.7	20.4	96.8	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	27.9	265.0	17.1	34.9	73.7	357.1	225.6	556.5	*30.4	100.5	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	27.4	159.9	17.3	34.7	72.9	371.0	233.7	583.9	12.1	91.7	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	26.5	148.5	17.6	35.6	71.1	331.7	217.0	547.6	(S)	73.6	(NA)	(NA)
1958 Census <sup>2</sup> ...	590	161	24.2	114.9	16.3	31.5	62.1	257.6	200.4	461.8	9.1	70.4	84	90

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

(S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 9 and 5, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued August 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary  
 Rocco C. Siciliano, Under Secretary  
 Harold C. Passer, Assistant Secretary for Economic Affairs  
**BUREAU OF THE CENSUS** George Hay Brown, Director

Of the \$871.3 million total value of shipments and other receipts of establishments classified as surgical appliances and supplies, \$170.0 million were products primary to other industries; and \$90.9 million were receipts for miscellaneous activities. The industry shipments of primary products represented 78 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 80 percent in 1963.

The total value of surgical appliances and supplies shipped by all producers in 1967 was

\$680.4 million of which \$610.4 million, or 90 percent, were shipped by plants classified in industry 3842, Surgical Appliances and Supplies, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 90 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
INDUSTRY 3842.—SURGICAL APPLIANCES AND SUPPLIES													
United States, total.....	813	214	36.5	227.8	25.5	49.9	130.2	547.5	338.7	871.3	31.4	28.3	370.3
New England.....	61	26	3.9	20.9	3.0	5.7	14.1	41.0	26.6	67.7	1.5	4.0	34.6
Connecticut.....	18	13	2.1	11.3	1.5	2.7	6.8	24.8	14.4	38.5	0.8	2.0	18.5
Middle Atlantic.....	197	54	12.7	90.0	8.0	15.9	47.2	215.6	117.8	327.6	7.8	11.0	165.9
Pennsylvania.....	52	16	4.4	29.3	2.6	5.2	15.0	60.7	43.7	103.8	2.1	(D)	(D)
East North Central....	179	59	8.7	55.8	6.0	11.5	32.1	146.6	86.0	227.6	(D)	6.4	108.9
Illinois.....	62	20	5.0	34.7	3.2	6.4	19.9	103.8	49.9	150.9	(D)	3.9	82.9
West North Central....	66	18	1.4	8.2	0.9	1.8	4.5	16.5	11.4	27.9	(D)	1.4	11.0
Minnesota.....	20	8	0.6	3.9	0.4	0.7	1.8	9.2	5.3	14.3	0.1	0.6	5.4
Missouri.....	21	7	0.6	3.2	0.4	0.9	2.0	5.5	4.8	10.4	0.2	0.6	4.4
South.....	164	26	6.7	32.1	5.3	10.8	21.2	83.5	66.5	146.4	10.3	3.4	27.7
South Atlantic.....	89	13	3.0	16.3	2.3	4.8	10.1	34.3	28.5	61.5	(D)	(D)	(D)
Tennessee.....	11	3	0.2	1.1	0.2	0.3	0.7	2.2	2.8	5.0	0.1	(D)	(D)
Mountain.....	27	6	0.4	2.5	0.3	0.5	1.1	6.0	4.8	10.7	0.3	0.3	2.1
Colorado.....	13	3	0.2	1.4	0.2	0.3	0.6	1.9	1.4	3.1	0.1	(D)	(D)
Pacific.....	119	25	2.7	18.2	2.0	3.7	10.1	38.4	25.6	63.4	1.5	1.8	20.1
California.....	107	24	2.7	17.7	1.9	3.6	9.7	37.3	25.0	61.8	(D)	1.8	19.1

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3842- --	SURGICAL APPLIANCES AND SUPPLIES, TOTAL.....		(X)	680.4	(X)	461.8
38421- --	Surgical, orthopedic, and prosthetic appliances and supplies.....		(X)	459.4	(X)	318.2
38421 11	Orthopedic appliances (braces), including parts.....		(X)	17.6	(X)	8.1
38421 15	Sterilizers (hospital and surgical), excluding dental sterilizers.....		(X)	24.9	(X)	15.8
38421 22	Surgical dressings:	Million sq.yds. } .....do..... }	(NA)	29.1	{ 2.0 27.3	{ 6.0 10.9
38421 23	Elastic bandages..... Other bandages, including muslin, plaster of Paris, etc. (excluding self adhering bandages).....					
38421 24	Adhesive, plaster, medicated and nonmedicated, including self- adhering bandages.....		(X)	85.6	(X)	53.7
38421 26	Gauze (absorbent and packing).....	Million sq.yds.	(NA)	4.5	106.5	5.7
38421 27	Cotton, including cotton balls (sterile and nonsterile).....		(X)	15.6	(X)	15.0
38421 29	Other surgical dressings, including sponges, compresses, pads, etc.....		(X)	50.1	(X)	30.8
38421 33	Sterile surgical sutures:					
38421 34	Absorbable.....		(X)	42.5	(X)	40.4
	Nonabsorbable.....		(X)	27.8	(X)	10.4
38421 35	Artificial limbs (prosthetic), including parts.....		(X)	9.9	(X)	7.6
38421 38	Elastic stockings.....		(X)	10.0	(X)	8.3
38421 41	Elastic braces, suspensories, and other elastic supports.....		(X)	11.9	(X)	7.5
38421 45	Arch supports and other foot appliances.....		(X)	7.7	(X)	3.3
38421 71	Surgical corsets.....	1,000 dozen.....	169.2	10.6	74.0	6.5
38421 65	Breathing devices excluding anesthetic apparatus but including incubators, respirators, resuscitators, inhalators, etc.....		(X)	16.5	{ (X)	{ 77.9
38421 61	Corn remover pads, bunion pads, etc.....		(X)	89.8		
38421 98	Other surgical and orthopedic items (wheel chairs, splints, trusses, etc.).....					
38421 00	Surgical, orthopedic, and prosthetic appliances and supplies n.s.k.....		(X)	5.2	(X)	10.4
38423 --	Personal industrial safety devices.....		(X)	143.8	(X)	97.4
38423 11	Respiratory protection equipment, including gas masks, abrasive masks, canister masks, etc.....		(X)	47.9	(X)	30.0
38423 31	Eye and face protection devices, including face shields, heads and welding helmets and masks excluding industrial goggles and eye protectors).....		(X)	17.9	(X)	11.5
38423 51	Protective clothing, except shoes.....		(X)	31.0	(X)	21.7
38423 61	First aid, snake bite and burn kits, both household and indus- trial types.....		(X)	8.2	(X)	7.0
38423 71	Other personal safety devices.....		(X)	37.2	(X)	27.2
38423 00	Personal industrial safety devices, n.s.k.....		(X)	1.7	(X)	
38424 13	Electronic hearing aids, complete units.....	1,000 units.....	360.0	38.9	355.0	35.3
38420 00	Surgical appliances and supplies, n.s.k. (Represents principally establishments with 10 employees or more in 1967. See Note).....		(X)	22.1	{ (X)	{ 11.0
38420 02	Surgical appliances and supplies, n.s.k. (Represents principally establishments with fewer than 10 employees in 1967. See Note).....		(X)	16.3		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000". Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard form were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable. - Represents zero.



1967 CENSUS OF MANUFACTURES  
TABLE 4. **Materials Consumed, by Kind: 1967 and 1963**

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3842.—SURGICAL APPLIANCES AND SUPPLIES					
	Materials, parts, containers, and supplies, total.....		(X)	234.4	(X)	175.8
209131	Cotton linters (net weight).....	Million lbs.....	(NA)	0.9	2.3	0.5
221101	Cotton broadwoven fabrics (piece goods).....	Million lin. yds..	(NA)	8.8	95.0	7.1
220149	Other broadwoven fabrics (piece goods).....	..do.....	(NA)	2.4	2.4	1.8
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	222.3	(X)	144.5
976000	Materials, parts, containers and supplies, n.s.k.....		(X)	48.6	(X)	21.9

(NA) Not available.      n.s.k. Not specified by kind.      (X) Not applicable.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3842, these small establishments accounted for approximately 2 percent of payrolls and 2 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

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**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# 1967 CENSUS OF MANUFACTURES

INDUSTRY SERIES

preliminary  
report

## Dental Equipment and Supplies

SIC Code 3843

The Dental Equipment and Supplies Industry includes establishments primarily engaged in manufacturing artificial teeth, dental metals, alloys and amalgams, and a wide variety of equipment, instruments, and supplies used by dentists, dental laboratories, and dental colleges. Dental laboratories constructing artificial dentures, bridges, inlays and other dental restorations on specifications from dentists are classified in industry 8072.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Dental Equipment and Supplies Industry amounted to \$209 million, an increase of 42 percent compared with 1963. Value added by manufacture at \$138 million in 1967 was 44 percent more than value added in 1963. Average employment in the industry showed an increase of 26 percent from 1963 to a total of 10 thousand employees in 1967.

Of the \$209 million total value of shipments and other receipts of establishments classified as dental equipment and supplies, \$14 million were products primary to other industries; and \$10 million were receipts for miscellaneous

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3843--DENTAL EQUIPMENT AND SUPPLIES														
1967 Census . . .	333	75	10.1	66.2	7.2	14.3	38.0	137.8	74.7	209.2	4.4	44.5	93	95
1966 ASM <sup>1</sup> . . . . .	(NA)	(NA)	9.5	60.6	6.6	13.3	35.4	130.1	74.0	205.6	*5.0	41.7	(NA)	(NA)
1965 ASM <sup>1</sup> . . . . .	(NA)	(NA)	9.1	55.6	6.6	12.6	32.7	124.6	70.1	194.0	4.5	39.1	(NA)	(NA)
1964 ASM <sup>1</sup> . . . . .	(NA)	(NA)	8.1	48.1	5.7	11.5	28.2	105.4	61.7	164.6	*3.2	35.9	(NA)	(NA)
1963 Census . . . . .	316	66	8.0	46.1	5.8	11.2	27.1	95.9	52.8	147.8	2.7	33.7	94	92
1962 ASM <sup>1</sup> . . . . .	(NA)	(NA)	7.3	39.1	5.1	10.0	22.6	88.0	51.8	139.6	1.9	30.4	(NA)	(NA)
1961 ASM <sup>1</sup> . . . . .	(NA)	(NA)	7.4	38.1	5.2	10.0	22.2	76.3	48.3	124.0	1.3	30.2	(NA)	(NA)
1960 ASM <sup>1</sup> . . . . .	(NA)	(NA)	7.5	38.1	5.4	10.3	23.2	79.5	48.3	125.5	2.8	29.6	(NA)	(NA)
1959 ASM <sup>1</sup> . . . . .	(NA)	(NA)	7.2	36.3	5.2	10.2	22.1	75.0	44.1	118.2	1.8	27.4	(NA)	(NA)
1958 Census <sup>2</sup> . . . .	249	55	7.2	34.8	5.2	10.2	21.1	71.6	44.9	115.7	1.5	26.4	95	92

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 2, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued August 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents



U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

William H. Chartener, Assistant Secretary for Economic Affairs

BUREAU OF THE CENSUS A. Ross Eckler, Director



activities. The industry shipments of primary products represented 93 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 94 percent in 1963.

The total value of dental equipment and supplies shipped by all producers in 1967 was \$196 million of which \$185 million, or 94 percent, were shipped by plants classified in industry 3843, Dental Equipment and Supplies, while the remainder was

shipped by plants classified in other industries. This percent, called the coverage ratio, was 92 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1 and 2 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

1967 CENSUS OF MANUFACTURES  
TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employ- ees or more (number)	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
	INDUSTRY 3843--DENTAL EQUIPMENT AND SUPPLIES												
United States, total.....	333	75	10.1	66.2	7.2	14.3	38.0	137.8	74.7	209.2	4.4	8.0	95.9
Northeast.....	130	37	5.6	35.6	4.1	8.2	21.9	72.7	40.8	112.0	2.4	4.6	56.4
New York.....	67	15	2.7	19.2	1.8	3.6	11.3	36.9	22.4	57.9	1.3	2.1	29.6
North Central.....	78	22	2.5	17.3	1.8	3.5	9.5	35.2	18.7	53.1	1.3	1.7	20.5
East North Central..	61	19	2.3	15.3	1.6	3.3	8.9	31.7	16.0	46.9	(D)	1.6	19.0
West North Central..	17	3	0.2	1.9	0.1	0.2	0.6	3.6	2.6	6.2	(D)	0.1	1.4
South.....	36	4	0.6	4.4	0.4	0.9	2.0	11.0	5.6	16.3	0.2	0.7	7.7
West.....	89	12	1.4	8.9	0.9	1.7	4.7	18.8	9.6	27.9	0.4	1.0	11.3
California.....	65	7	0.9	6.4	0.6	1.1	3.2	13.6	6.9	20.2	(D)	0.5	6.2

Note: Only those regions, divisions, or States are listed that could be shown without disclosing the operations of individual companies, either directly or by subtraction from higher-level totals. Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3843- --	DENTAL EQUIPMENT AND SUPPLIES, TOTAL.....		(X)	196.1	(X)	139.5
	Dental metals:					
38430 11	Precious.....	Thousand Troy oz.....	560.1	21.2	797.0	19.5
38430 15	Nonprecious.....	..do.....	1,766.8	4.1	1,062.0	2.5
38430 21	Dental alloys for amalgams.....	..do.....	3,222.3	6.1	1,537.0	2.7
	Teeth, excluding dentures:					
38430 31	Porcelain.....	Million teeth.	53.3	12.8	60.5	12.4
38430 35	Other, including resinous and plastic.....	..do.....	36.0	9.1	26.7	5.1
38430 41	Denture materials.....		(X)	4.8	(X)	3.8
38430 47	Dental professional equipment, including dental chairs, equipment units, cabinets, lights, etc.....		(X)	46.5	(X)	27.2
38430 51	Dental laboratory equipment, including furnaces, casting machines, lathes, benches, polishing units, flasks, blow pipes, presses, etc.....		(X)	7.7	(X)	6.1
38430 57	Dental hand instruments (forceps and pliers, broaches, cutting instruments, etc.).....		(X)	12.4	(X)	8.1
38430 61	Burs, diamond points, abrasive points, wheels, disks, and similar tools for use with hand pieces.....		(X)	8.7	(X)	7.7
38430 71	Waxes, cements, dental gypsums, impression materials, and other consumable supplies including low-fusing alloys.....		(X)	22.1	(X)	14.4
38430 98	Other dental products, including dental sterilizers (excluding X-ray equipment).....		(X)	24.9	(X)	23.7
38430 00	Dental instruments, equipment, and supplies, n.s.k. (Represents principally establishments with 10 employees or more in 1967. See Note.).....		(X)	8.0	(X)	6.4
38430 02	Dental instruments, equipment, and supplies, n.s.k. (Represents principally establishments with fewer than 10 employees in 1967. See Note.).....		(X)	7.7	(X)	

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 censuses of manufactures products which were identified less than completely on the standard forms were coded to the appropriate product class code (5 digits) followed by "00." In some cases such products could be coded only to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind. (X) Not applicable.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(Not applicable to this report)

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3843, these small establishments accounted for approximately 3 percent of payrolls and 3 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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**U. S. DEPARTMENT OF COMMERCE**  
**Bureau of the Census**



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**BUREAU OF THE CENSUS**  
**WASHINGTON, D.C. 20233**

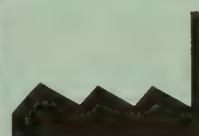
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# 1967 CENSUS OF MANUFACTURES



MC67(P)-38A-8

## INDUSTRY SERIES

## preliminary report

### Ophthalmic goods

SIC Code 3851

The Ophthalmic Goods Industry includes establishments primarily engaged in manufacturing ophthalmic frames, lenses, and sunglass lenses. Establishments primarily engaged in manufacturing slit lamps are classified in industry 3841, and molded glass blanks in industry 3229. Establishments primarily engaged in grinding lenses and fitting glasses to prescription are classified in trade.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Ophthalmic Goods Industry amounted

to \$426.3 million, an increase of 56 percent compared with 1963. Value added by manufacture at \$286.4 million in 1967 was 61 percent more than value added in 1963. Average employment in the industry showed an increase of 26 percent from 1963 to a total of 25.6 thousand employees in 1967.

Of the \$426.3 million total value of shipments and other receipts of establishments classified as ophthalmic goods, \$72.2 million were products primary to other industries; and \$8.3 million were receipts for miscellaneous activities. The industry shipments of primary products represented 83 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 86 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture  (million dollars)	Cost of materials  (million dollars)	Value of shipments  (million dollars)	Capital expenditures, new  (million dollars)	End-of-year inventories  (million dollars)	Specialization ratio  (percent)	Coverage ratio  (percent)
	Total  (number)	With 20 employees or more (number)	Number  (1,000)	Payroll  (million dollars)	Number  (1,000)	Man-hours  (millions)	Wages  (million dollars)							
	INDUSTRY 3851.—OPHTHALMIC GOODS													
1967 Census....	<sup>3</sup> 460	142	25.6	143.4	20.8	41.0	103.4	286.4	144.5	426.3	14.5	97.9	83	94
1966 ASM <sup>1</sup> .....	(NA)	(NA)	23.0	121.4	18.9	38.2	89.7	237.0	116.8	346.8	12.6	86.2	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	22.4	112.8	18.2	37.0	81.3	215.6	106.6	318.2	10.0	77.0	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	21.0	104.5	17.0	34.6	76.2	197.0	104.1	300.3	8.9	74.4	(NA)	(NA)
1963 Census.....	229	109	20.3	96.4	16.5	32.8	69.0	177.9	96.6	272.7	9.1	72.7	86	92
1962 ASM <sup>1</sup> .....	(NA)	(NA)	21.1	93.7	17.8	35.6	70.2	159.9	81.7	241.5	7.1	66.5	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	19.3	83.7	16.0	31.7	61.1	147.6	72.2	217.8	9.0	65.4	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	20.7	84.2	17.1	33.7	63.1	152.8	74.3	225.5	5.7	64.6	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	19.5	78.9	16.4	32.4	59.4	146.3	70.9	214.8	5.1	62.7	(NA)	(NA)
1958 Census <sup>2</sup> ...	246	104	18.2	71.5	15.3	30.0	53.5	136.7	62.0	194.4	5.4	59.6	87	98

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

<sup>3</sup>For 1967, a sizeable number of small establishments (typically under 10 employees) may have been misclassified in this industry because of the use of administrative records. Although this has a significant effect on the number of establishments for this industry, it has a small effect on the statistics, i.e. number of employees, salaries and wages, value added, etc. It is estimated that the effect on these principal statistics is less than 2 percent.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director

The total value of ophthalmic goods shipped by all producers in 1967 was \$367.2 million of which \$345.8 million, or 94 percent, were shipped by plants classified in industry 3851, Ophthalmic Goods, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 92 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3851.--OPHTHALMIC GOODS													
United States total.....	460	142	25.6	143.4	20.8	41.0	103.4	286.4	144.5	426.3	14.5	20.3	177.9
New England.....	52	24	6.5	34.9	5.5	10.5	26.3	94.1	38.9	131.2	(D)	5.6	58.6
Middle Atlantic.....	157	52	11.5	69.0	9.1	18.0	48.6	111.6	54.0	161.4	(D)	9.7	79.6
New York.....	103	34	9.1	55.7	7.1	14.1	39.2	85.9	37.6	119.4	(D)	7.7	61.5
New Jersey.....	25	10	0.9	4.7	0.7	1.5	3.3	8.8	5.3	14.0	0.2	0.7	7.3
Pennsylvania.....	29	8	1.5	8.6	1.2	2.4	6.1	16.9	11.1	28.0	0.6	1.3	10.8
East North Central....	76	16	1.7	10.8	1.3	2.8	7.7	15.6	10.6	27.2	0.3	1.1	10.5
Ohio.....	22	4	0.3	1.3	0.2	0.4	1.1	2.3	2.0	4.3	(Z)	0.2	1.5
Illinois.....	29	7	0.9	5.7	0.7	1.6	4.2	8.4	5.6	13.9	0.2	0.5	3.9
Michigan.....	13	1	0.1	1.0	0.1	0.2	0.6	1.6	1.0	2.5	(Z)	(D)	(D)
West North Central....	39	17	1.5	7.1	1.3	2.7	5.3	16.2	8.0	24.4	0.4	0.9	6.7
Minnesota.....	13	7	0.6	3.2	0.5	1.1	2.2	10.4	2.9	13.3	0.1	(D)	(D)
Missouri.....	14	7	0.7	3.1	0.6	1.4	2.5	4.1	4.2	8.4	(D)	0.5	3.1
South.....	75	19	3.4	16.4	2.7	5.6	11.1	39.5	25.8	65.5	1.0	(D)	(D)
South Atlantic.....	28	11	2.8	13.4	2.2	4.6	8.9	33.6	20.1	53.9	0.8	2.4	17.5
Texas.....	22	7	0.5	2.3	0.4	0.8	1.7	4.6	4.8	9.4	(D)	(D)	(D)
Mountain.....	13	3	0.2	0.9	0.1	0.2	0.8	1.4	1.4	2.8	(Z)	(Z)	0.1
Colorado.....	9	3	0.1	0.7	0.1	0.2	0.7	1.1	1.3	2.4	(D)	(D)	(D)
Pacific.....	48	11	0.8	4.3	0.6	1.2	3.6	8.0	5.8	13.7	0.4	0.2	2.0
California.....	34	7	0.5	2.9	0.4	0.9	2.3	5.4	3.2	8.6	0.3	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3851- --	OPHTHALMIC GOODS, TOTAL.....		(X)	367.2	(X)	244.1
38511 --	Ophthalmic fronts and temples.....		(X)	75.9	(X)	68.1
	Fronts, finished (with or without decoration), and temples:					
38511 12	Gold-filled fronts, full-rimmed or semirimmed.....	Million units	1.0	3.2	0.9	2.5
38511 14	Aluminum or other metal fronts.....	..do.....	1.1	2.8	0.7	2.5
38511 15	Plastic fronts.....	..do.....	21.4	24.6	20.1	26.7
38511 16	Combination fronts.....	..do.....	6.1	14.6	4.7	12.2
38511 17	Temples (all types), finished.....	Million pairs	34.8	30.7	24.7	24.2
38512 --	Ophthalmic focus lenses, including contact lenses.....		71.9	134.0	36.5	70.0
38512 21	Plastic lenses.....	Million pairs				
38512 23	Contact lenses.....	..do.....				
38512 31	Single vision lenses (ground and polished and molded blanks)....	..do.....	71.9	134.0	36.5	70.0
	Multifocal lenses (finished and semifinished and molded blanks):					
38512 41	Bifocals.....	..do.....				
38512 43	Other.....	..do.....				
38513 --	All other ophthalmic goods.....		(X)	123.9	(X)	97.1
38513 21	Centers, oxfords, parts, trim, unfinished fronts and temples, etc.....		(X)	10.1	(X)	6.8
38513 31	Ophthalmic spectacles and eyeglasses (frames and mountings of all types when sold with corrective lenses inserted--with or without decoration).....	Million units	(NA)	23.8	3.3	4.8
38513 41	Industrial goggles, eye protectors, welding circles and plates, mountings, and parts.....		(X)	35.4	(X)	23.0
38513 51	Sun or glare glasses and sungoggles, complete.....	Million units	18.0	39.1	32.6	45.0
38513 98	Other ophthalmic goods and accessories (sunglass frames, single readers and magnifiers, holders, gas mask inserts, etc.).....		(X)	15.5	(X)	17.5
38510 00	Ophthalmic goods, n.s.k. (Represents principally establishments with 10 employees or more in 1967. See Note.).....		(X)	24.9		
38510 02	Ophthalmic goods, n.s.k. (Represents principally establishments with fewer than 10 employees in 1967. See Note.).....		(X)	8.5	(X)	9.0

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(Not applicable to this report)

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3851, these small establishments accounted for approximately 2 percent of payrolls and 2 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



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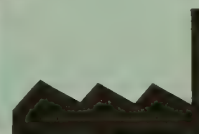
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# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

**preliminary  
report**

### Photographic equipment and supplies

SIC Code 3861

The Photographic Equipment and Supplies Industry includes establishments primarily engaged in manufacturing (1) photographic apparatus, equipment, parts, attachments, and accessories, such as still and motion picture cameras and projection apparatus; photocopy and microfilm equipment; blueprinting and diazotype (white printing) apparatus and equipment; and other photographic equipment; and (2) sensitized film, paper, cloth, and plates, and prepared photographic chemicals for use therewith. Establishments primarily engaged in manufacturing photographic paper stock (unsensitized), and paper mats, mounts, easels and folders for photographic use are classified in Major Group 26; photographic lenses in industry 3831; photographic glass in Major Group 32; chemicals for technical purposes, not specifically prepared and packaged

for use in photography, in Major Group 28; and photographic flash, flood enlarger and projection lamps in industry 3641.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Photographic Equipment and Supplies Industry amounted to \$3,570.8 million, an increase of 93 percent compared with 1963. Value added by manufacture at \$2,272.4 million in 1967 was 79 percent more than value added in 1963. Average employment in the industry showed an increase

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
	INDUSTRY 3861.--PHOTOGRAPHIC EQUIPMENT AND SUPPLIES													
1967 Census....	554	210	92.9	805.9	55.2	108.2	395.0	2,272.4	1,270.7	3,570.8	216.2	510.1	96	98
1966 ASM <sup>1</sup> .....	(NA)	(NA)	84.3	710.9	55.3	109.2	377.3	2,282.0	1,099.9	3,285.7	148.4	524.9	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	70.5	599.8	45.4	91.9	313.5	1,773.2	825.9	2,552.8	98.9	375.2	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	66.6	532.7	41.0	81.8	272.2	1,485.5	631.6	2,091.2	46.0	319.8	(NA)	(NA)
1963 Census....	538	187	64.9	498.8	39.2	77.8	251.6	1,270.1	580.5	1,851.2	78.6	289.5	95	97
1962 ASM <sup>1</sup> .....	(NA)	(NA)	59.4	440.0	35.6	70.6	223.0	1,098.1	573.5	1,635.9	57.2	260.9	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	61.2	427.8	37.0	73.0	217.8	987.0	521.5	1,517.8	49.2	244.3	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	62.4	418.8	38.9	76.5	219.0	978.9	505.6	1,467.0	60.0	243.2	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	56.1	376.9	35.2	70.6	199.9	876.8	450.7	1,318.0	47.1	214.1	(NA)	(NA)
1958 Census <sup>2</sup> ....	480	159	60.3	369.0	38.5	74.3	201.6	788.7	412.3	1,204.9	46.8	204.2	94	94

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**

of 43 percent from 1963 to a total of 92.9 thousand employees in 1967.

Of the \$3,570.8 million total value of shipments and other receipts of establishments classified as photographic equipment and supplies, \$110.2 million were products primary to other industries; and \$448.1 million were receipts for miscellaneous activities. The industry shipments of primary products represented 96 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 95 percent in 1963.

The total value of photographic equipment and supplies shipped by all producers in 1967 was

\$3,088.3 million of which \$3,022.5 million, or 98 percent, were shipped by plants classified in industry 3861, Photographic Equipment and Supplies, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 97 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
	INDUSTRY 3861.--PHOTOGRAPHIC EQUIPMENT AND SUPPLIES												
United States, total.....	554	210	92.9	805.9	55.2	108.2	395.0	2,272.4	1,270.7	3,570.8	216.2	64.9	1,270.1
Northeast.....	230	95	66.2	623.9	36.5	72.9	291.3	1,864.9	931.4	2,824.4	184.1	48.8	1,034.1
Connecticut.....	12	4	0.3	2.1	0.2	0.5	1.2	4.5	2.8	7.3	0.3	(D)	(D)
New Jersey.....	39	15	3.9	32.1	2.4	4.8	15.3	65.9	60.1	125.0	6.3	3.7	65.9
Pennsylvania.....	19	8	0.4	2.3	0.3	0.5	1.3	5.1	4.2	9.2	0.4	0.4	4.0
North Central.....	156	61	14.6	107.0	9.7	17.9	56.9	254.4	213.4	459.5	15.2	10.7	177.9
Illinois.....	77	35	10.5	80.4	6.8	12.3	41.9	150.9	134.5	280.4	8.4	7.8	101.6
Michigan.....	17	3	0.3	1.7	0.2	0.4	0.9	3.2	4.7	7.9	(D)	0.3	1.4
South.....	49	14	5.9	27.0	4.9	9.4	18.9	55.6	64.7	120.9	(D)	1.5	11.3
Texas.....	11	3	0.2	1.0	0.1	0.3	0.7	1.8	2.4	4.2	0.2	(D)	(D)
Mountain.....	12	5	0.4	2.4	0.3	0.6	1.7	1.3	2.5	6.4	0.1	0.2	2.2
Pacific.....	107	35	6.0	45.5	3.8	7.5	26.1	96.3	58.8	159.6	(D)	3.7	44.7

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3861- --	PHOTOGRAPHIC EQUIPMENT AND SUPPLIES, TOTAL.....		(X)	3,088.3	(X)	1,631.4
38611 --	Still picture equipment, total.....		(X)	475.8	(X)	223.6
	Still cameras:					
	Hand-type cameras (excluding film, bulbs, batteries, etc., in outfits):					
38611 11	Suggested retail list price under \$30.00.....	1,000 units...	10,382.1	139.0	7,765.9	62.1
38611 13	Suggested retail list price of \$30.00 or more but under \$80.00.....	do.....				
	Suggested retail price of \$80.00 or over:					
38611 15	Using film or paper, 35 mm. or under.....	do.....				
38611 17	Using film or paper, over 35 mm., including sheet and pack film.....	do.....				
	Process cameras for photoengraving and photolithography: <sup>1</sup>					
38611 22	Horizontal types, including overhead, all sizes.....	do.....	2.3	4.6	2.3	4.7
38611 24	Vertical types, all sizes.....	do.....	1.9	1.6		
38611 31	Other still cameras, including view and studio, designed primarily for tripod or stand, but excluding photocopying, microfilming, blueprinting, bromprinting and whiteprinting....	do.....	195.8	68.9	(NA)	23.1
	Flash units (except built-in):					
	Electronic (stroboscopic):					
38611 42	Portable, battery operated.....	do.....	1,142.6	9.1	49.5	2.8
38611 45	Studio type.....	do.....			0.8	0.4
38611 47	Nonelectronic (using disposable flashbulb).....	do.....			985.0	3.0
38611 10	Photographic exposure meters, complete, except built-ins.....	do.....			(X)	1.2
	Projectors (with lenses of f/4.0 or faster) with suggested list price of \$25.00 or more:					
38611 63	Slide film.....	do.....	428.9	35.4	452.1	22.1
38611 68	Strip film, including combination slide and strip.....	do.....	207.8	12.7	105.7	10.3
38611 69	Other, including overhead, opaque, etc.....	do.....	103.7	16.8		
	Still picture commercial type finishing equipment:					
38611 73	Processing equipment--for film.....	do.....	(X)	53.1	(X)	33.2
38611 75	Processing equipment--for paper.....	do.....				
38611 79	All other processing equipment, including developing machines, continuous printing machines, and motor operated print washers and dryers.....	do.....	(X)	30.9		
38611 81	Enlargers <sup>2</sup> .....	1,000 heads...	32.4	5.0	12.2	1.8
38611 98	Other still picture equipment, parts, attachments, and accessories, including projectors with lenses not as fast as f/4.0 and/or with suggested retail list price less than \$25.00 and hand viewers (excluding lenses for sale separately and projection screens).....	do.....	(X)	96.1	(X)	55.7
38611 00	Still picture equipment, n.s.k.....	do.....	(X)	2.6	(X)	3.2
38612 --	Photocopying equipment, total.....	Thousands.....	(NA)	628.5	(NA)	173.6
	Photocopying equipment primarily for producing copies 11" x 14" or smaller:					
	Suggested retail price:					
38612 11	Less than \$100.00.....	do.....	(3)	3626.7	(3)	3162.1
38612 13	\$100.00 to \$499.99.....	do.....				
38612 16	\$500.00 to \$999.99.....	do.....				
38612 18	\$1,000.00 to \$1,499.99.....	do.....				
38612 19	\$1,500.00 or over.....	do.....				
38612 23	Photocopying equipment primarily for producing copies larger than 11" x 14".....	do.....	(X)	1.8	(X)	11.5
38612 00	Photocopying equipment, n.s.k.....	do.....				
38613 --	Motion picture equipment, total.....		(X)	184.4	(X)	127.9
	8 mm. and 16 mm. motion picture equipment:					
	Cameras (excluding film, bulbs, batteries, etc., in outfits):					
38613 07	16 mm.....	1,000.....	(4)	(4)	4.9	4.3
38613 15	8 mm.....	do.....	(4)	(4)	585.4	25.1
	Projectors (with lenses of f/2.0 or faster, with suggested retail list price of \$25.00 or more):					
38613 27	16 mm. (sound and silent).....	do.....	(4)	(4)	44.9	17.1
28613 42	8 mm. sound.....	do.....	41,508.2	483.8	546.8	27.8
38613 44	8 mm. silent.....	do.....				

See footnotes at end of table.



## 1967 CENSUS OF MANUFACTURES

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3861- --	PHOTOGRAPHIC EQUIPMENT AND SUPPLIES--Continued					
38613 --	Motion picture equipment--Continued					
	8 mm. and 16 mm. motion picture equipment--Continued					
38613 52	Projection screens (for motion picture and/or still projection).....	1,000.....	890.5	10.0	1,402.0	13.6
38613 75	8 mm. and 16 mm. motion picture parts, attachments, accessories, and other 8 mm. and 16 mm. motion picture equipment, including sound recording. Also including projectors with lenses not as fast as f/2.0 and/or suggested retail list price under \$25.00, and hand viewers, excluding lenses for sale separately and projection screens).....	.....	(X)	18.3	(X)	16.1
38613 61	Motion picture processing equipment, all types, including printing machines, developing machines, and drying machines, excluding motion picture type equipment used for still picture work and interchangeable types.....	.....	(X)	20.2	(X)	9.0
	35 mm. and over motion picture equipment:					
38613 81	Cameras.....	1,000.....	0.7	4.3	0.7	4.0
38613 85	Projectors.....	...do.....	4.1	3.2	(NA)	1.1
38613 98	35 mm. and over motion picture parts, attachments, accessories, and other 35 mm. and over motion picture equipment, including sound recording and studio equipment, excluding lenses for sale separately and processing equipment.....	.....	(X)	9.8	(X)	9.8
38614 --	Microfilming, blueprinting, brownprinting, and whiteprinting equipment, total.....		(X)	53.1	(X)	29.3
38614 11	Microfilming equipment, including microfilm cameras, readers, printers, enlargers and other special purpose equipment for microfilm use.....				(X)	17.2
38614 21	Blueprinting, brownprinting, and whiteprinting (direct process type) equipment.....		(X)	53.1	(X)	12.1
38615 --	Photographic sensitized film and plates, total.....		(X)	1,084.5	(X)	604.9
	X-ray film:					
38615 41	Medical.....	TSFSM (MM) <sup>5</sup> ...	454.6	159.2	284.9	93.7
38615 43	Dental.....	...do.....	6.5	9.4	4.0	6.5
38615 45	Industrial.....	...do.....	53.2	29.4	25.0	13.2
38615 99	Other film, including motion picture black and white and color film, amateur roll film, still color film, aerofilm, microfilm, etc. <sup>6 7</sup> .....	...do.....	1,352.3	886.5	<sup>a</sup> 852.6	<sup>a</sup> 491.5
38616 --	Sensitized photographic paper and cloth, silver halide type, total.....		(X)	233.8	(X)	191.3
38616 11	Designed for continuous-tone reproduction (photofinishing, portraiture, etc.) roll and sheet form.....	TSFSM (MM) <sup>5</sup> ...	804.4	159.5		
38616 15	Designed for line reproduction, graphic arts, etc.; other than photocopy process and oscillograph recording.....	...do.....	201.5	18.0	(NA)	191.3
38616 21	Designed for oscillograph and other types of instrumentation recording processes.....	...do.....				
38616 25	Designed for photocopy processes, including diffusion transfer, dye transfer, etc.....	...do.....	675.8	56.3		
38617 --	Sensitized photographic paper and cloth, other than silver halide type, total.....	TSYSM (MM) <sup>9</sup> ...	(X)	188.6	(X)	128.1
38617 11	Blueprint type.....	...do.....	368.9	38.7	83.1	5.7
	Diazo type, including film and plastic sheet:					
38617 13	Dry.....	...do.....	383.8	27.3	572.6	46.0
38617 15	Semimoist.....	...do.....	119.1	10.6	196.7	15.6
38617 21	Brownprinting type.....	...do.....	23.1	1.0	22.8	1.2
	Sensitized paper for photocopy processes:					
38617 31	Electrostatic.....	...do.....	2,298.6	99.1	1,281.2	51.1
38617 32	Heat sensitive.....	...do.....	260.9	5.4		
38617 39	Other types, including sensitized paper, film, and cloth for all other processes.....	...do.....	23.4	6.5	43.1	7.0
38617 00	Sensitized and photographic paper and cloth other than silver halide type, n.s.k.....	...do.....	-	-	(X)	1.4
3861811	Prepared photographic chemicals (developers, fixers, toners, and other chemicals specifically prepared and packaged for use in photography).....		(X)	142.2	(X)	74.3
38610 00	Photographic equipment and supplies, n.s.k. (Represents principally establishments with 10 or more employees in 1967. See Note.).....		(X)	84.9		
38610 02	Photographic equipment and supplies, n.s.k. (Represents principally establishments fewer than 10 employees in 1967. See Note.).....		(X)	12.5	(X)	78.4

See footnotes on next page.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

FOOTNOTES FOR TABLE 3--INDUSTRY 3861

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

- Represents zero. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Value includes stands and attachments shipped with process cameras.

<sup>2</sup>Quantity figures include heads shipped separately, as well as complete units. Value figures include the value of heads shipped separately, stands shipped separately and complete units shipped.

<sup>3</sup>The number of units shipped, including leased machines, totaled 370.0 thousand in 1967 and 264.9 thousand in 1963. The value shown includes for some companies rental receipts rather than the value of machines produced during the year.

<sup>4</sup>Product code 38613 15 has been combined with product codes 38613 42 and 38613 44 to avoid disclosing operations of individual companies.

<sup>5</sup>Represents total square feet of sensitized material (in millions).

<sup>6</sup>Includes an indeterminate amount of duplication resulting from shipments of film producers for further manufacturing process.

<sup>7</sup>Motion picture film, amateur roll film and other film wire combined to avoid disclosing operations of individual companies. Motion picture film was reported in linear feet by width and has been converted to TSFSM. Amateur roll film and other film were collected in TSFSM. In 1967, the statistics published for product code 38615 99 were collected separately as codes 38615 05, 38615 13, 38615 15, 38615 21, 38615 23, 38615 25, 38615 31, 38615 33, 38615 35, 38615 51, 38615 53, 38615 55, 38615 61, 38615 62, 38615 63, 38615 64, 38615 65, 38616 66, 38616 67, 38616 68, 38616 69, 38616 71, 38616 75, and 38615 77.

<sup>8</sup>Includes the following figures which were not separately published in 1967:

Item	Quantity TSFSM (millions)	Value (million dollars)
Sheet film and pack film other than graphic arts film (more than 25 ft. in length and more than 30 mm. in width).....	43.4	32.9
Graphic arts film (for lithography, rotogravure, photo-engraving and silk screen processing).....	186.8	63.0
Photographic glass plates and slides.....	1.9	4.2

<sup>9</sup>Represents total square yards of sensitized materials (in millions).

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3861.--PHOTOGRAPHIC EQUIPMENT AND SUPPLIES					
	Materials, components, parts, containers, and supplies, total.....		(X)	1,106.8	(X)	482.7
	Mill shapes and forms (except castings)					
331001	Carbon steel.....	1,000 short tons.	18.7	5.3	25.3	7.4
331020	Alloy steel, except stainless.....	...do.....	5.1	1.2		
331031	Stainless steel.....	...do.....	2.7	3.5	3.0	4.0
335121	Copper and copper-base alloy.....	Million pounds..	1.4	0.8	0.9	0.5
335208	Aluminum and aluminum-base alloy.....	...do.....	6.8	3.8	(NA)	(NA)
333401	Aluminum and aluminum-base alloy refinery shape.....	1,000 short tons.	0.1	0.3	(D)	(D)
336100	Aluminum and aluminum-base alloy castings <sup>1</sup> .....	Million pounds..	8.2	5.3	12.5	8.1
	Fractional horsepower electric motors (under 1 hp.): <sup>1</sup>					
362110	Timing motors, synchronous and subsynchronous.....	Millions of units	0.7	3.1	0.6	3.6
362115	Other fractional horsepower motors, excluding timing motors...	...do.....	1.8	5.4	0.4	1.8
367010	Electron tubes, except X-ray <sup>1</sup> .....	...do.....	0.3	0.9	0.2	0.4
367408	Solid state semiconductors <sup>1</sup> .....	...do.....	2.1	1.3	0.4	0.4
281997	Silver nitrate.....	Million ounces..	28.3	25.3	28.1	20.3
383101	Photographic and projection lens and prisms.....		(X)	29.7	(X)	8.6
970099	All other materials, components, parts, containers, and supplies consumed.....		(X)	842.5	(X)	373.6
976000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> .....		(X)	177.6	(X)	54.0

(D) Included with material code 970099 "All other materials, etc." to avoid disclosing operations of individual companies.

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>No data are available for the quantities of aluminum and aluminum-base alloy castings, fractional horsepower electric motors, electron tubes, or solid state semiconductors produced and consumed in the same establishment.

<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3861, these small establishments accounted for approximately 0.3 percent of payrolls and 0.3 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products**--In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture**--This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment**--For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories**--Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

**U.S. DEPARTMENT OF COMMERCE**  
**Bureau of the Census**  
Washington, D.C. 20233

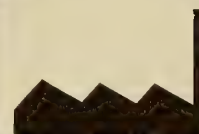
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U.S. DEPARTMENT OF COMMERCE

OFFICIAL BUSINESS





# 1967 CENSUS OF MANUFACTURES



INDUSTRY SERIES

**preliminary  
report**

## Photographic equipment and supplies

SIC 3861

### Change Sheet

The following changes should be made to the specified products in table 3 of the 1967 Preliminary Census of Manufactures report MC67(P)38B-1, "Photographic Equipment and Supplies", issued in January 1970. Higher level totals are not affected by this change.

Product code	Product	1967			
		As published		As revised	
		Quantity (1,000)	Value (million dollars)	Quantity (1,000)	Value (million dollars)
	8mm and 16mm motion picture equipment:				
	Cameras (Excluding film, bulbs, batteries, etc., in outfits):				
38613 07	16mm.....	(4)	(4)	(4)	(4)
38613 15	8mm.....	(4)	(4)	(4)	(4)
	Projectors (with lenses of f/2.0 or faster, with suggested retail list price of \$25.00 or more:				
38613 27	16mm (sound and silent).....	(4)	(4)	<sup>4</sup> 81.0	<sup>4</sup> 34.8
38613 42	8mm sound.....	<sup>4</sup> 1,508.2	<sup>4</sup> 83.8	<sup>4</sup> 1,508.2	<sup>4</sup> 83.8
38613 44	8mm silent.....				

<sup>4</sup>Product code 38613 07 has been combined with product code 38613 27 and product code 38613 15 has been combined with products codes 38613 42 and 38613 44 to avoid disclosing figures of individual companies.

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

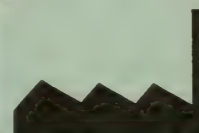
**BUREAU OF THE CENSUS George Hay Brown, Director**







# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

**preliminary  
report**

### Watches and clocks

SIC Code 3871

The Watches, Clocks, Clockwork Operated Devices, and Parts Except Watchcases, Industry includes establishments primarily engaged in manufacturing clocks (including electric), watches, mechanisms for clockwork operated devices, and clock and watch parts. This industry includes establishments primarily engaged in assembling clocks and watches from purchased movements and cases. Establishments primarily engaged in manufacturing watchcases are classified in industry 3872, glass crystals in industry 3231, and unbreakable crystals in industry 3079.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Watches and Clocks Industry amounted to \$746.5 million, an increase of 46 percent compared with 1963. Value added by manufacture at \$367.7 million in 1967 was 28 percent more than value added in 1963. Total employment in the industry showed an increase of 17 percent from 1963 to a total of 31.5 thousand employees in 1967.

Of the \$746.5 million total value of shipments and other receipts of establishments classified as watches and clocks, \$127.7 million were products primary to other industries; and \$39.0 million were receipts for miscellaneous activities. The industry shipments of primary products represented 82 percent of the total manufactured

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3871.--WATCHES AND CLOCKS														
1967 Census....	176	84	31.5	187.9	24.5	49.6	122.9	367.7	387.6	746.5	9.5	176.8	82	91
1966 ASM <sup>1</sup> .....	(NA)	(NA)	29.9	172.2	22.8	45.3	112.7	366.6	328.0	669.4	9.8	153.7	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	28.5	156.7	22.0	43.7	101.8	335.1	292.2	611.8	7.3	118.1	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	27.2	147.9	20.7	41.5	96.6	313.1	253.3	553.2	6.9	105.1	(NA)	(NA)
1963 Census....	167	76	27.0	144.2	21.0	41.2	92.4	288.1	230.3	511.2	8.7	89.5	82	95
1962 ASM <sup>1</sup> .....	(NA)	(NA)	24.0	127.7	18.1	35.4	77.9	240.1	191.6	427.3	*8.0	89.8	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	22.4	118.1	16.4	32.6	71.2	219.7	187.1	403.1	*9.4	87.5	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	24.7	124.4	18.7	36.0	76.0	225.7	189.7	408.5	*5.1	86.1	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	25.4	125.1	20.2	40.0	81.5	240.8	180.7	406.7	*4.6	81.2	(NA)	(NA)
1958 Census <sup>2</sup> ...	168	65	23.5	106.7	18.3	36.1	70.8	165.2	158.3	334.9	4.6	60.5	88	95

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

**BUREAU OF THE CENSUS** George Hay Brown, Director

product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was also 82 percent in 1963.

The total value of watches and clocks shipped by all producers in 1967 was \$636.9 million of which \$579.8 million, or 91 percent, were shipped by plants classified in industry 3871, watches and clocks, while the remainder was shipped by plants classified in other industries. This per-

cent, called the coverage ratio, was 95 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

**TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963**

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture  (million dollars)	Cost of materials  (million dollars)	Value of shipments  (million dollars)	Capital expenditures, new  (million dollars)	All employees  (1,000)	Value added by manufacture  (million dollars)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
	INDUSTRY 3871.--WATCHES AND CLOCKS												
United States, total.....	176	84	31.5	187.9	24.5	49.6	122.9	367.7	387.6	746.5	9.5	27.0	288.1
Middle Atlantic.....	84	34	9.1	61.6	7.0	14.1	37.5	92.9	153.9	250.0	1.7	(D)	(D)
Illinois.....	21	10	5.3	30.5	4.0	7.7	21.0	57.0	61.4	116.9	(D)	6.4	61.1
California.....	10	2	.1	.8	.1	.1	.4	1.4	1.3	2.8	(Z)	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers				
			1967		1963		
			Quantity	Value (million dollars)	Quantity	Value (million dollars)	
3871- --	WATCHES AND CLOCKS, TOTAL.....	.....	(X)	636.9	(X)	406.2	
38711 --	Clocks.....	.....	(X)	259.5	(X)	173.8	
	Electric clocks, complete, frequency motor (synchronous or subsynchronous, except as specified below in "Other clocks, complete"):						
38711 11	Alarm, excluding clock timers and timing mechanisms.....	Million units.	14.0	29.6	6.0	19.6	
	Household, except alarm:						
38711 12	Wall.....	do.....	3.6	16.3	4.6	22.1	
38711 13	All other, including chime and strike, occasional, desk, and mantle.....	do.....					
38711 15	Commercial, including office, factory, and school.....	do.....	0.4	3.1	0.8	6.7	
	Spring wound and weight operated clocks, except automobile clocks and as specified below in "Other clocks, complete":						
38711 21	Alarm.....	do.....	9.1	29.1	6.9	21.7	
38711 23	Household and commercial, except alarm, including chime and strike, kitchen, desk, mantle and wall.....	do.....					
38711 25	Battery powered clocks.....	do.....	1.5	12.9	( <sup>1</sup> )	( <sup>1</sup> )	
38711 28	Timers and switch clocks having hands and dials for telling time of day, including electric and spring wound.....	do.....	(X)	36.5	1.4	4.9	
38711 35	Other clocks, complete (tower, street, master, magnet operated secondary clocks, chronometers, and all types of automotive, etc.....	do.....					
38711 53	Clock movements, complete but not cased for timepiece use, including clocks for clock radios, including electric and spring wound.....	Million units.	8.6	18.6	4.8	10.4	
	Timing mechanisms, not for timepiece use, including elapsed time indicators, delay timers, program timers, etc., and mechanisms for recording and controlling instruments, parking meters, driving mechanisms, metronomes, and other devices (excluding time recording and time stamp machines):						
	Electric:						
38711 62	Military timing mechanisms.....	Million units.	5.9	66.0	10.0	55.8	
38711 63	Household timing mechanisms.....	do.....	1.9	6.7			
38711 64	Commercial timing mechanisms.....	do.....	1.5	28.6			
38711 65	Spring wound.....	do.....	2.4	5.5			
38711 00	Clocks, n.s.k.....	.....	(X)	6.6	(X)	1.6	
38714 --	Watches with imported movements.....	.....	(X)	190.4	(X)	112.8	
	Jeweled lever escapement (excluding battery powered):						
	Men's wrist:						
38714 13	Under 17 jewels.....	Million units.	1.1	10.0	3.0	49.8	
38714 15	17 jewels.....	do.....	3.3	60.4			
38714 19	Over 17 jewels.....	do.....	0.3	4.1			
	Women's wrist:						
38714 23	Under 17 jewels.....	Million units.	0.8	7.1	2.6	49.6	
38714 25	17 jewels.....	do.....	3.7	70.8			
38714 29	Over 17 jewels.....	do.....	1.2	8.0		4.4	
38714 39	Other, including pocket, lapel, etc.....	do.....					
38714 62	Pin lever escapement-all types (excluding travel and automobile clocks, etc., with watch movements).....	do.....	1.9	27.2	0.6	4.5	
38714 65	Battery powered.....	do.....					
38714 00	Watches with imported movements, n.s.k.....	.....	(X)	2.8	(X)	0.6	
38715 --	Watches with domestic movements and parts for all clocks and watches.....	.....	(X)	122.8	(X)	102.2	
	Jeweled lever escapement type watches (excluding battery powered):						
	Men's wrist.....	Million units.	0.6	10.0	0.9	20.6	
38715 25	Women's wrist.....	do.....	4.1	49.4	0.8	27.7	
38715 61	Other watches with domestic movements, including pocket watches (jeweled or pin lever), pinlever wrist watches (men's and women's), and battery powered watches of all types.....	do.....	(X)	50.8	(X)	46.0	
38715 81	Clock and watch parts, except watch crystals: Clock cases and clock parts (excluding timing motors).....	.....					

See footnotes at end of table.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963—Continued

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3871- --	WATCHES AND CLOCKS--Continued					
38715 --	Watches with domestic movements and parts for all clocks and watches--Continued					
38715 87	Clock and watch parts, except watch crystals--Continued	Million units.				
	Watch movements, complete, for sale separately (excluding those purchased and resold in the same condition).....		(X)	12.3	(X)	6.7
38715 89	Watch parts for sale separately, except watchcases, and watch crystals, excluding interplant transfers (excluding those purchased and resold in the same condition).....					
38715 00	Watches with domestic movements and parts for all clocks and watches, n.s.k.....		(X)	0.3	(X)	1.2
38710 00	Watches and clocks, n.s.k. (Represents principally establishments with 10 employees or more in 1967. See Note.).....		(X)	29.4		
38710 02	Watches and clocks, n.s.k. (Represents principally establishments with fewer than 10 employees in 1967. See Note.).....		(X)	2.7	(X)	17.3

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Battery powered clocks included with other complete clocks (product code 38711 35) for 1963.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3871.--WATCHES AND CLOCKS					
	Materials, parts, containers, and supplies, total.....		(X)	368.4	(X)	207.0
	Fractional horsepower electric motors: (under 1 hp.) <sup>1</sup>					
362110	Timing motors, synchronous and subsynchronous.....	Millions.....	3.1	4.4	1.1	2.0
362115	Other fractional horsepower electric motors (excluding timing motors).....	do.....	(*)	(*)	(*)	(*)
	Watchcases: <sup>1</sup>					
	Mens' wristwatch cases:					
387200	Carat gold and platinum.....	do.....	0.3	3.3	0.1	2.9
387201	Gold filled.....	do.....	0.3	2.7	0.4	2.3
387202	Rolled gold plate and sterling silver (including rolled gold plate with steel back).....	do.....	(*)	(*)	1.0	2.5
387203	Other metals.....	do.....	10.0	9.3	2.8	4.8
	Women's wristwatch cases:					
387204	Carat gold and platinum.....	do.....	0.2	3.6	0.2	4.1
387205	Gold filled.....	do.....	0.3	1.7	0.4	1.2
387206	Rolled gold plate and sterling silver (including rolled gold plate with steel back).....	do.....	1.5	3.8	2.5	5.5
387207	Other metals.....	do.....	6.1	6.6	2.7	2.6
387208	Pocket and other watchcases (all qualities) <sup>1</sup> .....	do.....	(*)	(*)	1.1	0.5
387158	Imported watch movements.....		(X)	87.4	(X)	46.2
970099	All other materials, components, parts, containers, and supplies consumed.....		(X)	205.9	(X)	103.3
976000	Materials, parts, containers, and supplies, n.s.k. <sup>3</sup> .....		(X)	39.7	(X)	29.1

(X) Not applicable. n.s.k. Not specified by kind.

<sup>1</sup>No data are available for quantities of fractional horsepower electric motors or watchcases produced and consumed in the same establishment.

<sup>2</sup>Included with material code 970099, "All other materials and components, etc." to avoid disclosing figures for individual companies.

<sup>3</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3871, these small establishments accounted for approximately 0 percent of payrolls and 0 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

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WASHINGTON, D.C. 20233**

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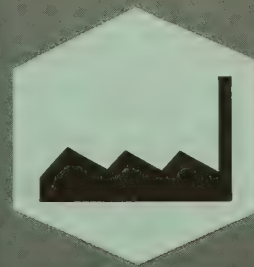
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# 1967 CENSUS OF MANUFACTURES



MC67(P)-38B-3

## INDUSTRY SERIES

**preliminary  
report**

### Watchcases

SIC Code 3872

The Watchcase Industry includes establishments primarily engaged in manufacturing watchcases.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Watchcase Industry amounted to \$56.8 million, an increase of 69 percent compared with 1963. Value added by manufacture at \$32.3 million in 1967 was 68 percent more than value added in

1963. Average employment in the industry showed an increase of 41 percent from 1963 to a total of 3.8 thousand employees in 1967.

Of the \$56.8 million total value of shipments and other receipts of establishments classified as watchcases, \$13.3 million were products primary to other industries; and \$0.5 million were receipts for miscellaneous activities. The industry shipments of primary products represented 76 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 86 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3872.--WATCHCASES														
1967 Census....	48	20	3.8	21.6	3.2	5.8	17.0	32.3	24.1	56.8	0.9	8.4	76	99
1966 ASM <sup>1</sup> .....	(NA)	(NA)	4.1	21.7	3.6	7.0	17.8	34.7	24.1	58.1	0.9	9.3	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	3.5	18.5	3.0	6.1	15.0	27.8	18.5	45.0	*0.5	8.3	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	2.8	14.0	2.4	4.7	11.0	18.9	14.0	33.5	*0.5	4.2	(NA)	(NA)
1963 Census....	53	22	2.7	13.4	2.3	4.5	10.4	19.2	13.4	33.6	0.5	5.9	86	97
1962 ASM <sup>1</sup> .....	(NA)	(NA)	2.3	11.6	2.0	3.9	9.1	12.0	11.5	24.6	(Z)	5.7	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	2.1	10.4	1.8	3.3	8.1	10.3	9.8	22.2	(Z)	4.7	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	2.6	12.5	2.3	4.4	9.8	14.6	12.8	29.4	(S)	6.3	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	3.1	14.7	2.7	5.3	11.3	20.5	16.3	35.7	(S)	7.8	(NA)	(NA)
1958 Census <sup>2</sup> ....	61	24	2.7	12.6	2.2	4.4	9.4	18.4	14.8	34.7	(Z)	7.3	80	98

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available. (Z) Less than \$50 thousand.

(S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 2 and 4, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director

The total value of watchcases shipped by all producers in 1967 was \$44.4 million of which \$43.0 million, or 99 percent, were shipped by plants classified in industry 3872, Watchcases, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 97 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

(See Appendix 1, Explanation of Terms.)

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3872.--WATCHCASES												
United States, total.....	48	20	3.8	21.6	3.2	5.8	17.0	32.3	24.1	56.8	0.9	2.7	19.2
Middle Atlantic.....	44	17	1.7	10.2	1.4	2.7	7.7	16.5	12.8	28.9	0.3	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity	Value (million dollars)	Quantity	Value (million dollars)
3872- --	WATCHCASES, TOTAL.....	(X)	44.4	(X)	29.4
38720 --	Watchcases:				
	For jeweled watch movements:				
	Men's wristwatch cases:				
38720 11	Carat gold and platinum.....	386.2	7.0	127.5	2.1
38720 13	Gold-filled.....	361.0	3.5	254.5	2.1
38720 15	Rolled goldplate and sterling silver, including rolled goldplate with steel back.....	8,121.5	14.1	6,769.7	6.8
38720 19	Other metals.....				
	Women's wristwatch cases:				
38720 21	Carat gold and platinum.....	562.3	6.8	425.4	3.9
38720 23	Gold-filled.....	119.3	0.6	170.4	1.0
38720 25	Rolled goldplate and sterling silver, including rolled goldplate with steel back.....	1,915.7	4.0	4,752.5	7.1
38720 29	Other metals.....	1,117.4	1.5	1,007.9	1.3
	For nonjeweled or pin-lever watch movements:				
	Wristwatch cases:				
38720 51	Gold-filled, rolled goldplate, and sterling silver (including rolled goldplate with steel back).....	-	-	-	-
38720 59	Other metals.....	(NA)	2.1	385.6	0.7
38720 65	Pocket and other watchcases (all qualities) for jeweled, nonjeweled or pin-level watch movements).....			318.6	2.4
38720 00	Watchcases, n.s.k. (Represents principally establishments with 10 or more employees in 1967. See Note.).....	(X)	4.3	(X)	1.9
38720 02	Watchcases, n.s.k. (Represents principally establishments with fewer than 10 employees in 1967. See Note.).....	(X)	0.5		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

-Represents zero. (NA) Not available. (X) Not applicable.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(Not applicable to this report)



## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3872, these small establishments accounted for approximately 0 percent of payrolls and 0 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.

# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# CURRENT INDUSTRIAL REPORTS

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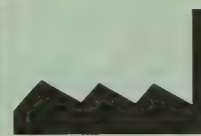








# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

**preliminary  
report**

### Jewelry, precious metal

SIC Code 3911

The Jewelry, Precious Metal Industry includes establishments primarily engaged in manufacturing jewelry and other articles worn on or carried about the person, made of precious metals with or without stones (including the setting of stones where used), including cigarette cases and lighters, vanity cases and compacts; trimmings for umbrellas and canes; and jewel settings and mountings. Establishments primarily engaged in manufacturing costume jewelry from nonprecious metals and other materials are classified in industry 3961.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Jewelry, Precious Metal, Industry amounted to \$750.1 million, an increase of 56 percent compared with 1963. Value added by manufacture at \$357.5 million in 1967 was 52 percent more than value added in 1963. Average employment in the industry showed an increase of 25 percent from 1963 to a total of 30 thousand employees in 1967.

Of the \$750.1 million total value of shipments and other receipts of establishments classified as jewelry, precious metal, \$59 million were products primary to other industries; and \$69 million were receipts for miscellaneous activities. The industry shipments of primary products

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (per-cent)	Coverage ratio (per-cent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3911.—JEWELRY, PRECIOUS METAL														
1967 Census....	1,485	307	30.0	183.2	22.8	44.1	113.8	357.5	401.4	750.1	5.9	149.1	91	97
1966 ASM <sup>1</sup> .....	(NA)	(NA)	29.3	161.3	22.2	44.3	94.9	327.9	375.9	693.8	5.2	135.1	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	28.4	144.8	21.6	45.0	87.8	314.1	319.3	620.5	3.9	124.2	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	24.1	134.3	17.5	36.0	83.6	240.0	272.8	508.6	3.5	104.9	(NA)	(NA)
1963 Census....	1,438	218	23.6	125.6	17.5	35.6	79.3	234.9	248.4	481.9	3.7	105.3	92	97
1962 ASM <sup>1</sup> .....	(NA)	(NA)	21.7	112.9	16.1	34.6	72.5	203.9	211.0	411.4	1.8	80.8	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	21.4	106.5	15.8	33.4	67.8	189.6	198.0	386.5	2.4	82.4	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	20.8	102.6	15.5	32.5	65.5	189.0	182.3	362.7	2.4	78.5	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	20.6	99.1	15.5	32.1	64.1	174.6	173.5	348.3	*2.8	68.4	(NA)	(NA)
1958 Census <sup>2</sup> ...	1,302	183	21.2	95.1	15.9	30.7	60.7	166.6	160.5	327.3	3.5	70.6	95	98

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 5 and 3, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary  
Rocco C. Siciliano, Under Secretary  
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represented 91 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 92 percent in 1963.

The total value of precious metal jewelry shipped by all producers in 1967 was \$642.7 million of which \$622 million, or 97 percent, were shipped by plants classified in industry 3911, Jewelry, Precious Metal, while the remainder was

shipped by plants classified in other industries. This percent, called the coverage ratio, was also 97 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3911.—JEWELRY, PRECIOUS METAL												
United States, total.....	1,485	307	30.0	183.2	22.8	44.1	113.8	357.5	401.4	750.1	5.9	23.6	234.9
New England.....	222	85	10.5	59.4	8.2	15.9	35.5	115.3	74.6	186.9	2.6	7.6	65.4
Massachusetts.....	56	25	4.7	30.6	3.3	6.6	16.0	48.9	30.3	76.1	1.6	3.9	32.1
Rhode Island.....	156	60	5.7	28.5	4.9	9.1	19.3	65.9	44.0	109.9	1.0	3.6	33.1
Middle Atlantic.....	900	162	13.2	87.7	9.9	18.9	53.9	174.5	273.8	441.8	2.3	11.2	115.9
New York.....	779	131	10.2	68.5	7.6	14.3	41.4	143.4	238.4	374.7	2.0	8.3	92.3
New Jersey.....	69	26	2.6	17.2	2.0	4.1	11.0	26.9	30.8	58.4	0.3	2.5	20.5
Pennsylvania.....	52	5	0.4	2.1	0.3	0.5	1.5	4.2	4.6	8.8	(Z)	0.4	3.1
East North Central....	106	25	2.7	17.1	1.8	3.8	10.6	32.3	24.0	55.2	(D)	1.9	23.2
Illinois.....	34	7	0.8	4.6	0.6	1.2	3.2	8.6	7.8	16.2	(D)	0.5	5.6
Michigan.....	18	7	0.5	3.2	0.3	0.6	1.6	6.7	6.4	12.8	(Z)	0.4	4.5
West North Central....	23	9	1.0	4.8	0.6	1.3	3.4	4.6	4.7	11.6	(D)	0.9	10.1
South.....	63	8	0.7	3.9	0.6	1.2	2.9	8.0	4.8	12.8	0.1	0.6	5.0
Florida.....	15	1	0.1	0.4	0.1	0.1	0.4	0.7	0.9	1.5	(D)	(D)	(D)
West South Central....	25	4	0.5	2.5	0.4	0.8	1.8	5.8	2.8	8.6	(D)	0.4	3.4
Texas.....	20	4	0.5	2.4	0.4	0.7	1.7	5.6	2.5	8.2	0.1	(D)	(D)
West.....	171	18	1.9	10.3	1.6	3.0	7.5	22.8	19.6	41.9	0.3	1.3	15.3
Oregon.....	8	1	0.1	0.5	0.1	0.1	0.4	1.0	1.1	2.1	(Z)	(D)	(D)
California.....	112	7	0.9	5.6	0.7	1.4	4.0	15.4	11.5	26.6	(D)	0.7	11.4
Hawaii.....	7	2	0.1	0.3	0.1	0.1	0.2	0.4	0.4	0.8	(D)	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.  
(Z) Less than \$50 thousand.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Value of shipments including interplant transfers (million dollars)	
		1967	1963
3911- --	JEWELRY, PRECIOUS METAL, TOTAL.....	642.7	400.4
39111 --	Jewelry made of platinum metals or carat gold, total.....	428.1	286.3
	Rings and ring mountings:		
	Rings (complete):		
39111 12	Wedding rings.....	99.6	37.5
39111 13	Other rings.....	139.3	102.9
39111 15	Ring mountings, for sale separately.....	26.2	20.9
39111 31	Women's and children's jewelry, such as necklaces, bracelets, brooches, pins, clips, earrings, lockets, etc. (excluding watch attachments and rings).....	109.2	56.0
39111 41	Watch attachments (bracelets for watches).....	14.3	10.3
39111 51	Organizational jewelry, including fraternal, college, and school jewelry and emblems, military insignias, (excluding rings).....	9.0	14.8
39111 98	Other jewelry worn or carried about the person, such as men's jewelry (collar and cuff buttons, studs, watch chains, etc.); religious jewelry (rosaries, chaplets, crosses, etc.); cigar and cigarette cases and lighters, compacts, vanity cases, etc.....	22.6	24.0
39111 00	Jewelry made of platinum metals or carat gold, n.s.k.....	7.9	19.8
39112 --	Jewelry made of precious metals, except platinum metals, and carat gold, total.....	125.9	93.7
	Jewelry made of gold-filled, rolled goldplate, palladium-filled, rolled palladium plate, and sterling silver:		
39112 11	Rings and ring mountings.....	18.7	7.1
39112 21	Men's jewelry, such as collar and cuff buttons, studs, watch chains, money clips, identification bracelets, scarf pins, tie and collar holders, etc. (excluding watch attachments and rings).....	10.6	6.9
39112 31	Women's and children's jewelry, such as necklaces, bracelets, brooches, pins, clips, earrings, lockets, etc. (excluding watch attachments and rings).....	51.4	23.2
39112 41	Watch attachments (bracelets for watches).....	25.5	27.6
39112 98	Other jewelry worn or carried about the person, such as fraternal, college, and school jewelry and emblems, (excluding rings) military insignia; religious jewelry (rosaries, chaplets, crosses, etc.); cigar and cigarette cases and lighters; compacts, vanity cases, etc.....	18.1	21.1
39112 00	Jewelry made of precious metals, except platinum metals, and carat gold, n.s.k.....	1.6	7.8
39110 00	Jewelry (precious metal), n.s.k. (For companies with 10 or more employees. See Note.).....	45.9	20.4
39110 02	Jewelry (precious metal), n.s.k. (For companies with less than 10 employees. See Note.).....	42.8	

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(Not applicable to this report)

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3911, these small establishments accounted for approximately 4 percent of payrolls and 6 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



## Appendix

### EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# CURRENT INDUSTRIAL REPORTS

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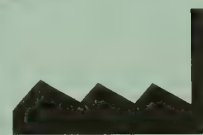
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# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

### Jewelers' findings and materials

SIC Code 3912

### preliminary report

The Jewelers' Findings and Materials Industry includes establishments primarily engaged in manufacturing unassembled jewelry parts, and stock shop products such as sheet, wire, and tubing. Establishments primarily engaged in lapidary work are classified in industry 3913.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Jewelers' Findings and Materials Industry amounted to \$124.6 million, an increase of 72 percent compared with 1963. Value added

by manufacture at \$57.7 million in 1967 was 70 percent more than value added in 1963. Average employment in the industry showed an increase of 13 percent from 1963 to a total of 5.5 thousand employees in 1967.

Of the \$124.6 million total value of shipments and other receipts of establishments classified as jewelers' findings and materials, \$8 million were products primary to other industries; and \$7 million were receipts for miscellaneous activities. The industry shipments of primary products represented 93 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 92 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3912.-JEWELERS' FINDINGS AND MATERIALS														
1967 Census....	232	62	5.5	29.3	4.5	8.6	18.8	57.7	68.1	124.6	1.9	18.9	93	92
1966 ASM <sup>1</sup> .....	(NA)	(NA)	5.1	24.5	4.2	8.2	16.5	46.0	62.7	108.2	*0.9	15.7	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	4.8	22.4	3.9	8.2	14.9	38.2	52.7	89.4	*1.7	14.8	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	5.0	21.6	4.1	8.2	14.8	33.6	46.3	79.1	*1.0	12.7	(NA)	(NA)
1963 Census.....	228	67	4.8	20.8	3.9	7.7	14.0	34.0	38.8	72.8	1.3	12.5	92	89
1962 ASM <sup>1</sup> .....	(NA)	(NA)	4.9	21.5	3.9	7.7	13.9	38.8	37.6	74.8	*0.9	17.2	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	4.7	19.1	3.8	7.3	12.8	34.6	32.8	67.7	*0.9	15.2	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	4.5	18.5	3.6	7.0	12.3	37.7	31.7	65.8	*1.3	15.3	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	4.3	17.9	3.5	7.1	12.4	30.0	33.7	64.3	*1.2	16.3	(NA)	(NA)
1958 Census <sup>2</sup> ...	248	55	4.2	16.4	3.5	6.8	11.5	26.8	29.9	57.5	0.6	13.0	90	87

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 3 and 8, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued August 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary  
Rocco C. Siciliano, Under Secretary  
BUREAU OF THE CENSUS

The total value of jewelers' findings and materials shipped by all producers in 1967 was \$117.0 million of which \$109 million, or 92 percent, were shipped by plants classified in industry 3912, Jewelers' Findings and Materials, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 89 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms").

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
	INDUSTRY 3912.—JEWELERS' FINDINGS AND MATERIALS												
United States, total.....	232	62	5.5	29.3	4.5	8.6	18.8	57.7	68.1	124.6	1.9	4.8	34.0
New England.....	140	42	4.0	20.9	3.3	6.3	13.5	39.7	34.6	73.3	(b)	3.5	22.6
Middle Atlantic.....	81	20	1.4	8.3	1.2	2.3	5.2	17.6	38.1	50.5	0.3	1.3	11.1
New York.....	63	12	1.0	5.6	0.8	1.5	3.5	13.3	33.2	41.3	0.2	0.7	5.7

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

**TABLE 3. Value of Shipments by All Producers: 1967 and 1963**

(Includes value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Value of shipments including interplant transfers (million dollars)	
		1967	1963
3912- --	JEWELERS' FINDINGS AND MATERIALS, TOTAL.....	117.0	70.5
39120 13	Jewelers' findings, such as joints, pins, clasps, spring rings, ring blanks, and other unassembled parts.....	61.7	36.5
39120 31	Machine chain.....	18.8	13.2
39120 41	Gold-filled and rolled goldplate materials.....	9.9	14.6
39120 51	Stock shop products, such as flat stock, wire, and tubing.....	13.6	
39120 00	Jewelers' findings and materials, n.s.k. (For establishments with 10 or more employees. See note)	7.5	
39120 02	Jewelers' findings and materials, n.s.k. (For establishments with fewer than 10 employees. See note)	5.5	6.2

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind.

**TABLE 4. Materials Consumed, by Kind: 1967 and 1963**

(Not applicable to this report)



## SCOPE AND COVERAGE

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As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

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# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

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The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

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**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

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WASHINGTON, D.C. 20233

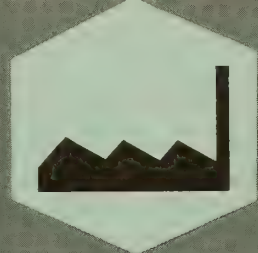
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OFFICIAL BUSINESS



# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

### Lapidary work

SIC Code 3913

## preliminary report

The Lapidary Work Industry includes establishments of lapidaries primarily engaged in cutting, slabbing, tumbling, carving, engraving, polishing, or faceting stones from natural or manmade precious or semiprecious gem raw materials, either for sale or on a contract basis for the trade; in recutting, repolishing, and setting gem stones; or in cutting, drilling, and otherwise preparing jewels for instruments, dies, watches, chronometers, and other industrial uses. This industry includes the drilling, sawing, and peeling of real or cultured pearls, but does not include the manufacture of artificial pearls (industry 3961).

The classification of establishments for which data are tabulated in this report is based upon the

definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Lapidary Work Industry amounted to \$88.9 million, an increase of 37 percent compared with 1963. Value added by manufacture at \$32.0 million in 1967 was 98 percent more than value added in 1963. Average employment in the industry showed an increase of 25 percent from 1963 to a total of 1.9 thousand employees in 1967.

Of the \$88.9 million total value of shipments and other receipts of establishments classified as lapidary work, \$4 million were products primary to other industries; and \$9 million were receipts

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3913.—LAPIDARY WORK														
1967 Census....	294	21	1.9	11.5	1.7	2.9	7.7	32.0	59.6	88.9	0.6	19.3	95	78
1966 ASM <sup>1</sup> .....	(NA)	(NA)	1.5	9.1	1.2	1.8	5.7	22.8	53.5	74.6	0.3	15.2	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	1.5	8.8	1.2	1.9	5.8	20.9	55.7	76.3	0.3	15.3	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	*1.5	*8.7	*1.1	*2.2	*5.7	*16.3	*51.7	*73.7	*0.3	*11.8	(NA)	(NA)
1963 Census....	318	15	1.5	8.3	1.2	2.3	6.1	16.1	45.7	65.1	0.4	15.3	93	81
1962 ASM <sup>1</sup> .....	(NA)	(NA)	1.9	8.3	1.7	2.9	5.8	16.5	28.4	44.9	*0.3	14.3	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	2.1	8.9	1.9	3.4	6.4	19.9	30.9	48.3	*0.5	14.6	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	1.7	8.0	1.5	2.8	5.6	14.7	25.1	40.0	(S)	11.1	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	1.9	8.3	1.6	3.0	5.8	17.7	30.1	45.7	(S)	11.4	(NA)	(NA)
1958 Census <sup>2</sup> ...	326	18	1.9	8.1	1.6	3.0	6.2	14.6	24.9	40.4	0.3	9.5	99	87

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

(S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 8 and 3, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued September 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary  
Rocco C. Siciliano, Under Secretary  
BUREAU OF THE CENSUS



for miscellaneous activities. The industry shipments of primary products represented 95 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 93 percent in 1963.

The total value of lapidary work shipped by all producers in 1967 was \$97 million of which \$76 million, or 78 percent, were shipped by plants classified in industry 3913, Lapidary Work, while

the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 81 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

## 1967 CENSUS OF MANUFACTURES

3

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3913.—LAPIDARY WORK												
United States, total.....	294	21	1.9	11.5	1.7	2.9	7.7	32.0	59.6	88.9	0.6	1.5	16.1
New England.....	42	4	0.3	1.4	0.3	0.5	1.1	2.9	1.3	4.2	(D)	0.3	1.8
Middle Atlantic.....	193	13	1.2	8.2	1.0	1.8	5.4	26.0	53.4	76.7	(D)	0.9	10.9
New York.....	179	13	1.1	7.9	1.0	1.7	5.2	25.3	52.8	75.4	(D)	0.8	9.8
East North Central....	17	1	0.1	0.5	0.1	0.1	0.3	1.2	1.4	2.6	(D)	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Value of shipments including interplant transfers (million dollars)	
		1967	1963
3913- --	LAPIDARY WORK, TOTAL.....	97.3	67.7
	Stones cut or polished from materials owned by the manufacturing establishment, excluding the setting of stones in jewelry:		
39130 11	Diamonds for jewelry purposes.....	69.0	36.2
39130 15	Diamonds for industrial purposes.....	4.3	12.0
39130 31 <sup>1</sup>	Other natural precious and semiprecious stones and synthetic stones, including the drilling of pearls.....	5.6	4.7
39130 00	Lapidary work and cutting and polishing diamonds, n.s.k. (For companies with 10 or more employees. See Note.).....	17.7	14.7
39130 02	Lapidary work and cutting and polishing diamonds, n.s.k. (For companies with less than 10 employees. See Note.).....	10.4	

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

<sup>1</sup>Includes lapidary work done on materials owned by others for which type of stone was not reported.

n.s.k. Not specified by kind.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(Not applicable to this report)

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3913, these small establishments accounted for approximately 17 percent of payrolls and 20 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

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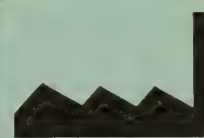
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OFFICIAL BUSINESS

POSTAGE AND FEES PAID  
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# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

## preliminary report

### Silverware and plated ware

SIC Code 3914

The Silverware, Plated Ware, and Stainless Steelware Industry includes establishments primarily engaged in manufacturing flatware (including knives, forks, and spoons), hollowware, toiletware, ecclesiastical ware, and related products made of sterling silver; of metal plated with silver, gold, or other metal; of nickel silver; of pewter; or of stainless steel.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Silverware and Plated Ware Industry

amounted to \$339 million, an increase of 42 percent compared with 1963. Value added by manufacture at \$198 million in 1967 was 51 percent more than value added in 1963. Average employment in the industry showed an increase of 13 percent from 1963 to a total of 15 thousand employees in 1967.

Of the \$339 million total value of shipments and other receipts of establishments classified as silverware and plated ware, \$16 million were products primary to other industries; and \$21 million were receipts for miscellaneous activities. The industry shipments of primary products represented 95 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was also 95 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3914.—SILVERWARE AND PLATED WARE														
1967 Census....	194	82	14.9	95.7	12.6	26.4	76.4	198.0	148.2	339.0	5.7	82.9	95	99
1966 ASM <sup>1</sup> .....	(NA)	(NA)	15.1	93.4	12.8	27.2	74.3	189.6	144.4	325.1	*8.2	77.1	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	14.1	82.3	11.9	25.0	64.9	159.9	130.7	288.3	*6.3	65.8	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	14.3	78.9	11.9	24.3	61.5	137.0	121.4	261.1	*3.5	60.9	(NA)	(NA)
1963 Census.....	209	87	13.2	70.9	10.9	22.1	54.8	130.7	108.9	238.9	2.7	60.6	95	98
1962 ASM <sup>1</sup> .....	(NA)	(NA)	14.0	72.0	11.5	23.4	55.8	130.0	107.6	235.7	*2.4	54.8	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	14.1	68.0	11.6	23.1	52.0	130.2	102.7	232.9	2.2	52.2	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	14.4	68.3	11.8	23.3	51.4	123.9	100.1	221.7	(S)	52.9	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	14.4	68.5	11.8	23.9	52.7	121.3	99.0	217.3	(S)	51.7	(NA)	(NA)
1958 Census <sup>2</sup> ....	209	87	13.9	62.3	11.2	21.9	47.6	109.7	85.2	196.1	2.5	47.7	95	98

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

(S) Withheld because the estimate did not meet publication standards, either on the basis of the associated standard error of estimate or on the basis of a consistency review.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary  
 Rocco C. Siciliano, Under Secretary  
 William H. Chartener, Assistant Secretary for Economic Affairs  
 BUREAU OF THE CENSUS A. Ross Eckler, Director

The total value of silverware and plated ware shipped by all producers in 1967 was \$305 million of which \$303 million, or 99 percent, were shipped by plants classified in industry 3914, Silverware and Plated Ware, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 98 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

1967 CENSUS OF MANUFACTURES  
TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3914.—SILVERWARE AND PLATED WARE												
United States, total.....	194	82	14.9	95.7	12.6	26.4	76.4	198.0	148.2	339.0	5.7	13.2	130.7
New England.....	65	36	8.8	58.9	7.5	15.6	47.7	126.5	93.4	213.7	(D)	7.9	80.6
Middle Atlantic.....	73	28	4.5	27.7	3.9	8.2	22.6	53.1	43.7	95.6	(D)	3.7	35.1
New York.....	46	18	3.8	23.9	3.3	7.1	19.7	46.7	37.0	82.3	(D)	3.1	29.3
North Central.....	20	7	0.9	4.8	0.7	1.4	3.3	9.6	7.5	17.4	(D)	0.9	9.1
Illinois.....	11	6	0.7	3.9	0.5	1.1	2.6	6.9	5.6	13.0	(D)	0.7	6.4
South Atlantic.....	8	4	0.4	2.2	0.3	0.6	1.5	5.3	1.7	6.9	0.1	0.3	2.1
West.....	23	6	0.3	1.8	0.2	0.5	1.2	3.1	1.7	4.7	(D)	0.4	3.2

Note: Only those regions, divisions, or States are listed that could be shown without disclosing the operations of individual companies, either directly or by subtraction from higher-level totals. Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000 dozens)	Value (million dollars)	Quantity (1,000 dozens)	Value (million dollars)
3914 --	SILVERWARE AND PLATED WARE, TOTAL.....	(X)	305.1	(X)	211.9
39141 --	Silverware, plated ware, and stainless steelware.....	(X)	126.3	(X)	93.9
	Hollowware (including toiletware, ecclesiastical ware, novelties, trophies, baby goods, and other plated ware):				
39141 11	Sterling silver.....	(X)	29.9	(X)	20.7
39141 31	Electrosilver plated.....	(X)	61.1	(X)	37.6
39141 51	Stainless steel.....	(X)	9.2	(X)	4.3
39141 55	Aluminum.....	(X)		(X)	
39141 65	Unplated hollowware of other metals and hollowware plated with metals other than silver, stainless steel, and aluminum.....	(X)	25.0	(X)	29.5
39141 00	Silverware, plated ware, and stainless steelware, n.s.k.....	(X)	1.1	(X)	1.8
39142 --	Flatware (including all knives, forks, spoons, and carving sets made wholly of metal).....	(X)	166.8	(X)	113.2
39142 11	Sterling silver.....	1,125	66.4	810	38.5
	Electrosilver plated:				
39142 34	Institutional.....	5,157	25.3	4,883	23.4
39142 36	Noninstitutional.....				
	Stainless steel:				
39142 54	Institutional.....	5,130	8.0	<sup>1</sup> 4,892	<sup>1</sup> 9.4
39142 56	Noninstitutional.....	22,839	65.2	<sup>2</sup> 16,365	<sup>2</sup> 40.4
39142 61	Unplated flatware of other metals and flatware plated with metals other than silver.....	(X)	1.9	(X)	1.1
39142 00	Flatware, n.s.k.....	(X)	(Z)	(X)	0.4
39140 00	Silverware and plated ware, n.s.k. (Represents principally establishments with 10 employees or more in 1967. See Note).....	(X)	8.9	(X)	
39140 02	Silverware and plated ware, n.s.k. (Represents principally establishments with fewer than 10 employees in 1967. See Note).....	(X)	3.1	(X)	4.8

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000". Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind. (X) Not applicable. (Z) Less than \$500 thousand.

<sup>1</sup>Identified as "hotel patterns" in the 1963 Census of Manufactures.

<sup>2</sup>Identified as "commercial patterns" in the 1963 Census of Manufactures.

## 1967 CENSUS OF MANUFACTURES

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3914.—SILVERWARE AND PLATED WARE					
	Materials, components, parts, containers, and supplies, total .....		(X)	132.9	(X)	97.4
	Mill shapes and forms:					
331001	Carbon steel.....	1,000 short tons..	27.5	25.4	1.4	0.3
331020	Alloy steel.....	...do.....			20.6	17.5
331031	Stainless steel.....	...do.....			(D)	(D)
335208	Aluminum and aluminum base alloy.....	Million lbs.....	(D)	(D)	(D)	(D)
335121	Copper and copper base alloy.....	...do.....	(D)	(D)	20.5	13.4
	Castings (rough and semifinished):					
336100	Aluminum and aluminum base alloy <sup>1</sup> .....	...do.....	(D)	(D)	(D)	(D)
336200	Copper and copper base alloy <sup>1</sup> .....	...do.....	0.5	0.5	0.6	0.4
333903	Precious metals, all forms, including ingot sheet, trip, solder, plating, electrodes, etc.....		(X)	41.5	(X)	24.5
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	36.7	(X)	34.4
976000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> .....		(X)	8.3	(X)	6.9

(D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher level totals or from related figures. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Excludes castings produced and consumed in the same establishment.

<sup>2</sup>Represents (a) for 1967 total cost of materials for small establishments (generally those with less than 10 employees) for which an estimated cost of materials was developed: for 1963 total cost of materials for small establishments reporting on "short forms" where separate figures for individual materials consumed were not requested and (b) for both 1967 and 1963 total cost of materials reported those establishments which failed to report costs of individual materials on "standard forms."

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3914, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



MCS7(P)-39B-1

## INDUSTRY SERIES

**preliminary  
report**

### Musical instruments and parts

SIC Code 3931

The Musical Instruments Industry includes establishments primarily engaged in manufacturing pianos, with or without player attachments; organs; other musical instruments; and parts and materials for musical instruments.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Musical Instruments and Parts Industry amounted to \$439.1 million, an increase of 40 percent compared with 1963. Value added by manufacture at \$241 million in 1967 was 35 percent more than value added in 1963. Average

employment in the industry showed an increase of 25 percent from 1963 to a total of 25.2 thousand employees in 1967.

Of the \$439 million total value of shipments and other receipts of establishments classified as musical instruments and parts, \$11 million were products primary to other industries; and \$30 million were receipts for miscellaneous activities. The industry shipments of primary products represented 97 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was also 97 percent in 1963.

The total value of musical instruments and parts shipped by all producers in 1967 was \$403.7 million of which \$398 million, or 98 percent,

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture  (million dollars)	Cost of materials  (million dollars)	Value of shipments  (million dollars)	Capital expenditures, new  (million dollars)	End-of-year inventories  (million dollars)	Specialization ratio  (percent)	Coverage ratio  (percent)
	Total  (number)	With 20 employees or more (number)	Number  (1,000)	Payroll  (million dollars)	Number  (1,000)	Man-hours  (millions)	Wages  (million dollars)							
INDUSTRY 3931.--MUSICAL INSTRUMENTS AND PARTS														
1967 Census....	344	123	25.2	145.4	21.1	40.5	107.4	241.4	205.2	439.1	10.5	124.4	97	98
1966 ASM <sup>1</sup> .....	(NA)	(NA)	25.1	139.8	20.5	41.9	103.5	248.2	204.4	437.3	*7.2	108.9	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	23.6	124.6	19.5	39.3	93.3	229.5	178.6	403.9	10.6	80.1	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	21.7	115.0	17.7	37.2	85.7	189.7	163.7	352.3	6.3	68.7	(NA)	(NA)
1963 Census.....	320	126	20.1	103.0	16.7	33.6	76.5	179.0	143.1	314.4	5.8	63.7	97	92
1962 ASM <sup>1</sup> .....	(NA)	(NA)	20.8	101.0	17.1	33.7	74.5	144.9	153.5	293.1	3.9	69.7	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	19.4	91.4	15.7	30.6	66.2	133.1	144.8	277.0	3.7	63.4	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	20.2	93.7	16.5	32.1	69.9	132.8	145.9	274.6	*4.2	60.2	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	18.6	88.2	15.4	30.5	66.5	154.9	150.8	297.0	*4.9	54.0	(NA)	(NA)
1958 Census <sup>2</sup> ...	273	116	16.1	74.6	13.1	25.6	55.8	120.9	114.3	236.7	4.6	45.6	98	91

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary  
 Rocco C. Siciliano, Under Secretary  
**BUREAU OF THE CENSUS** George Hay Brown, Director

were shipped by plants classified in industry 3931, Musical Instruments and Parts, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 92 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1,

2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
INDUSTRY 3931.--MUSICAL INSTRUMENTS AND PARTS													
United States, total.....	344	123	25.2	145.4	21.1	40.5	107.4	241.4	205.2	439.1	10.5	20.1	179.0
New England.....	32	8	0.7	4.9	0.6	1.1	3.0	7.5	4.3	11.6	0.2	0.8	7.3
Massachusetts.....	21	5	0.3	2.0	0.3	0.6	1.5	4.0	1.7	5.7	(2)	0.3	3.0
Middle Atlantic.....	83	25	3.4	20.1	2.9	5.7	14.6	32.1	21.6	51.8	0.5	3.4	26.6
New York.....	49	15	2.1	13.2	1.7	3.3	9.0	19.3	14.2	32.4	0.3	2.2	17.7
New Jersey.....	18	3	0.4	1.9	0.3	0.6	1.5	4.5	2.1	6.4	0.1	0.3	2.3
Pennsylvania.....	16	7	1.0	5.1	0.9	1.8	4.1	8.2	5.3	13.1	0.1	0.8	6.6
North Central.....	126	61	13.4	84.6	11.0	21.0	62.5	145.3	113.0	252.3	5.5	10.4	108.6
Ohio.....	18	7	1.2	6.8	1.1	1.9	5.6	8.4	5.9	14.4	0.6	1.1	7.4
Indiana.....	30	16	3.1	22.7	2.5	5.0	16.9	46.5	31.3	76.4	(D)	2.2	22.3
Illinois.....	40	24	6.4	38.4	5.2	9.6	26.7	64.7	56.3	117.6	(D)	5.0	56.5
South.....	47	18	5.4	22.6	4.7	9.0	17.6	37.1	45.1	83.1	1.4	4.2	27.2
North Carolina.....	7	4	0.5	2.1	0.4	0.8	1.4	3.2	5.1	8.2	(D)	(D)	(D)
West.....	56	11	2.3	13.2	1.9	3.7	9.7	19.5	21.3	40.2	3.0	1.2	9.2
California.....	37	7	1.9	11.1	1.6	3.1	8.2	15.8	18.9	34.1	(D)	1.0	6.9

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000)	Value (million dollars)	Quantity (1,000)	Value (million dollars)
3931- --	MUSICAL INSTRUMENTS AND PARTS, TOTAL.....	(X)	403.7	(X)	319.4
39311 --	Pianos, total.....	(X)	91.2	(X)	87.7
39311 11	Verticals, uprights, or consoles, 37 inches or less in height.....	119.2	46.0	115.5	39.6
39311 15	Verticals, uprights, or consoles, over 37 inches in height.....	74.2	34.9	92.8	40.3
39311 51	Grand pianos.....	5.9	10.3	5.5	8.8
39312 --	Organs, total.....	(X)	126.1	(X)	107.3
39312 11	Pipe and reed.....	(NA)	15.8	(NA)	13.7
39312 51	Electronic.....	(NA)	110.3	141.9	93.6
39313 --	Piano and organ parts, total.....	(X)	46.0	(X)	42.3
39313 11	Piano parts and materials (actions, attachments, strings, tuning pins, etc.), except benches.....	(X)	36.3	(X)	33.6
39313 51	Organ parts and materials, except benches.....	(X)	9.7	(X)	8.7
39314 --	Other musical instruments and parts, total.....	(X)	125.6	(X)	77.7
	Wind instruments, except organs and accordians:				
39314 13	Wood winds.....	260.8	23.3	177.7	13.0
39314 15	Brass winds.....	234.2	26.0	198.1	17.4
39314 23	Fretted instruments, nonelectronic only (such as guitars, banjos, mandolins, ukeleles, etc.).....	(NA)	16.7	(NA)	11.7
39314 25	String instruments (such as violins, violas, bass, and cello).....				
39314 31	Accessories and parts, sold separately, such as reed mouthpieces, music stands, drummers traps, etc., except instrument cases and benches.....				
39314 51	Electronic musical instruments, other electronic organs.....	(X)	18.1	(X)	10.5
39314 98	Other nonelectronic musical instruments, other electronic organs.....	(X)	19.2	(X)	9.7
39314 98	Other nonelectronic musical instruments, including harps, accordians, and percussion instruments, such as drums, vibes, etc.....	(X)	21.6	(X)	11.2
39314 00	Other musical instruments and parts, n.s.k. (For companies with 10 or more employees. See Note.).....	(X)	0.7	(X)	4.2
39310 00	Musical instruments and parts, n.s.k. (For companies with 10 or more employees. See Note.).....	(X)	10.6	(X)	4.4
39310 02	Musical instruments and parts, n.s.k. (For companies with less than 10 employees. See Note.).....	(X)	4.2		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963—Continued

(Not applicable to this report)



## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3931, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.

# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# CURRENT INDUSTRIAL REPORTS

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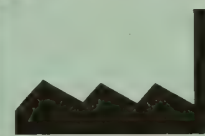
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OFFICIAL BUSINESS



# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

### Games and toys

SIC Code 3941

**preliminary  
report**

The Games and Toys, Except Dolls and Children's Vehicles, Industry includes establishments primarily engaged in manufacturing indoor games and game sets for adults and children, and mechanical and nonmechanical toys. Important products of this industry include games such as chess, checkers, dominoes, puzzles, and other indoor games; and toys, such as toy furniture, doll carriages and carts, construction sets, mechanical trains, toy guns and air rifles, and other mechanical games and toys. Establishments primarily engaged in manufacturing dolls are classified in industry 3942; children's outdoor wheel goods and vehicles, except bicycles, in industry 3943; and sporting and athletic goods for children and adults in industry 3949.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Games and Toys Industry amounted to \$1,099.0 million, an increase of 38 percent compared with 1963. Value added by manufacture at \$609.7 million in 1967 was 37 percent more than value added in 1963. Average employment in the industry showed an increase of 6 percent from 1963 to a total of 54.7 thousand employees in 1967.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3941. --GAMES AND TOYS														
1967 Census....	684	328	54.7	263.4	45.8	86.0	177.3	609.7	480.9	1,099.0	34.2	158.4	87	96
1966 ASM <sup>1</sup> .....	(NA)	(NA)	62.3	278.9	52.4	101.5	185.2	621.6	542.7	1,157.2	28.4	187.2	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	62.1	271.3	52.6	100.7	180.9	575.6	530.1	1,087.4	32.6	170.4	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	55.1	235.1	46.2	89.6	160.0	509.5	434.1	937.4	28.5	144.3	(NA)	(NA)
1963 Census....	797	351	51.8	206.7	44.0	84.4	145.2	444.1	362.2	796.6	27.7	135.3	92	91
1962 ASM <sup>1</sup> .....	(NA)	(NA)	48.0	185.6	39.3	77.7	129.3	406.1	325.6	715.0	18.1	108.9	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	50.4	183.3	41.4	78.2	126.0	411.3	336.1	736.5	14.9	95.7	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	45.7	164.0	37.6	72.4	113.2	342.5	302.0	635.3	14.7	87.5	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	45.4	159.2	37.0	69.8	110.8	308.4	284.3	595.3	*18.0	77.6	(NA)	(NA)
1958 Census <sup>2</sup> ....	854	367	43.0	149.7	36.0	68.0	106.6	288.9	258.2	544.1	16.5	79.6	93	92

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 2, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director



## 1967 CENSUS OF MANUFACTURES

Of the \$1,099.0 million total value of shipments and other receipts of establishments classified as games and toys, \$133.6 million were products primary to other industries; and \$76.7 million were receipts for miscellaneous activities. The industry shipments of primary products represented 87 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 92 percent in 1963.

The total value of games and toys shipped by all producers in 1967 was \$923.3 million of which

\$888.7 million, or 96 percent, were shipped by plants classified in industry 3941, Games and Toys, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 91 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
INDUSTRY 3941. --GAMES AND TOYS													
Unites States, total.....	684	328	54.7	263.4	45.8	86.0	177.3	609.7	480.9	1,099.0	34.2	51.8	444.1
New England.....	79	39	6.9	33.0	5.9	10.5	22.5	87.2	52.7	139.4	6.6	6.4	65.1
Massachusetts.....	39	24	3.8	19.9	3.1	6.0	12.7	54.9	32.7	86.3	5.5	2.5	35.2
Middle Atlantic.....	263	124	19.5	91.0	16.3	30.8	58.5	197.9	156.9	365.5	9.2	26.0	209.2
New York.....	167	71	9.6	46.7	7.8	15.0	28.0	113.6	92.9	205.5	5.5	12.4	110.4
New Jersey.....	60	32	6.7	30.2	5.7	10.8	20.3	62.2	42.4	114.2	3.2	8.0	62.0
Pennsylvania.....	36	21	3.2	14.1	2.8	5.0	10.2	22.1	21.7	45.8	0.6	5.5	36.7
East North Central....	145	88	11.7	56.2	9.9	18.9	40.4	124.0	108.3	233.1	8.4	10.2	93.6
West North Central....	35	15	3.1	14.1	2.7	4.6	10.3	36.0	28.6	63.8	4.5	1.7	16.4
Minnesota.....	12	6	2.1	10.2	1.9	3.0	7.2	24.9	21.0	45.5	3.5	1.0	10.2
South.....	55	28	4.5	18.2	4.0	7.8	14.9	38.2	34.3	71.8	2.1	4.3	30.3
East South Central..	11	8	0.9	3.1	0.8	1.5	2.5	6.6	4.8	11.3	0.1	0.9	6.6
West.....	107	34	9.1	51.1	7.0	13.1	30.3	125.9	100.0	225.3	3.4	3.3	29.6
California.....	85	29	8.5	48.8	6.5	12.2	28.7	121.6	97.2	218.0	(D)	3.0	27.4

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Value of Shipments by All Producers: 1967 and 1963

(Includes value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Value of shipments including interplant transfers (million dollars)	
		1967	1963
3941- --	GAMES AND TOYS, TOTAL.....	923.3	763.9
39410 11	Doll carriages and doll carts.....	37.5	{ <sup>1</sup> 10.1 ( <sup>2</sup> ) 17.1
39410 15	Doll houses and furniture.....		
39410 21	Toy trains and equipment (mechanical and electric).....		
	Mechanically powered toys, except trains and vehicle racing sets:		
39410 33	Battery operated.....	37.5	62.7
39410 35	Other, including those powered by spring and friction motors.....	4.7	
39410 36	Vehicular racing sets, including accessories and parts.....	42.4	
	Handicraft, hobby, structural, and model kits, sets, and components:		
39410 41	Structural kits, sets, and components.....	134.3	{6.7 42.6 ( <sup>2</sup> )
39410 51	Model construction sets (automobiles, airplanes, ships, trains, etc.).....		
39410 55	Other, including handicraft and hobby kits.....		
39410 38	Nonpowered transportation toys (nonriding) (excluding model kits; including boats, cars, trucks) etc.....	53.5	{ <sup>2</sup> 460.4
39410 63	Scientific toys (microscopes, chemistry sets, telegraph sets, mineralogy sets, etc.).....	7.6	
39410 65	Toy guns, gun sets, and rifles.....	49.3	
39410 67	Infant and preschool toys, n.e.c. including musical toys and toy musical instruments.....	75.6	
39410 73	Children's books: coloring books and picture-word books.....	181.1	
39410 87	Other toys not listed above.....		
	Games and puzzles:		
39410 91	Board games (chess, checkers, etc.).....	104.6	100.6
39410 92	Sports oriented action games (football, baseball, etc.).....	10.7	
39410 94	Other, including puzzles, etc.....	37.8	
39410 96	Parts for toys and games.....	23.4	12.3
39410 00	Games and toys, except dolls and children's vehicles, n.s.k. (For companies with 10 or more employees. See Note.).....	100.7	51.5
39410 02	Games and toys, except dolls and children's vehicles, n.s.k. (For companies with less than 10 employees. See Note.).....	11.9	

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.e.c. Not elsewhere classified. n.s.k. Not specified by kind.

<sup>1</sup>2,538 thousand units were shipped in 1963.

<sup>2</sup>Data for doll houses and furniture, (39410 10), and other handicraft and hobby kits (39410 55) were included with other toys (39410 87) for 1963.

## 1967 CENSUS OF MANUFACTURES

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3941.--GAMES AND TOYS					
	Materials, components, parts, containers, and supplies, total..		(X)	438.9	(X)	325.2
	Mill shapes and forms:					
331001	Carbon steel.....	1,000 short tons..	63.0	12.3	53.0	12.7
331020	Alloy steel.....	..do.....	} 10.4	4.0	} (NA)	3.3
331031	Stainless steel.....	..do.....				
335208	Aluminum and aluminum-base alloy.....	Million lbs.....				
335121	Copper and copper-base alloy.....	..do.....	3.5	1.1	0.3	0.2
			0.5	0.4	0.6	0.4
282130	Thermoplastic resins including modified resins.....	..do.....	226.1	44.1	184.3	36.5
282140	Thermosetting resins.....	..do.....	10.3	2.2	13.1	2.7
220123	Broadwoven fabrics (cotton, wool, manmade fiber fabrics, etc.)..	Million lin. yds..	2.1	0.9	2.5	1.2
311100	Leather, finished.....	Million lbs.....	1.4	0.6	3.4	0.9
265001	Paperboard containers and boxes.....		(X)	46.2	(X)	38.8
362115	Fractional horsepower electric motors (under 1 hp.) excluding timing motors).....	1,000 units.....	28,940.2	4.2	7397.0	2.6
970099	All other materials, components, parts, containers, and supplies consumed.....		(X)	231.6	(X)	183.8
976000	Materials, parts, containers, and supplies, n.s.k.....		(X)	91.3	(X)	42.3

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3941, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

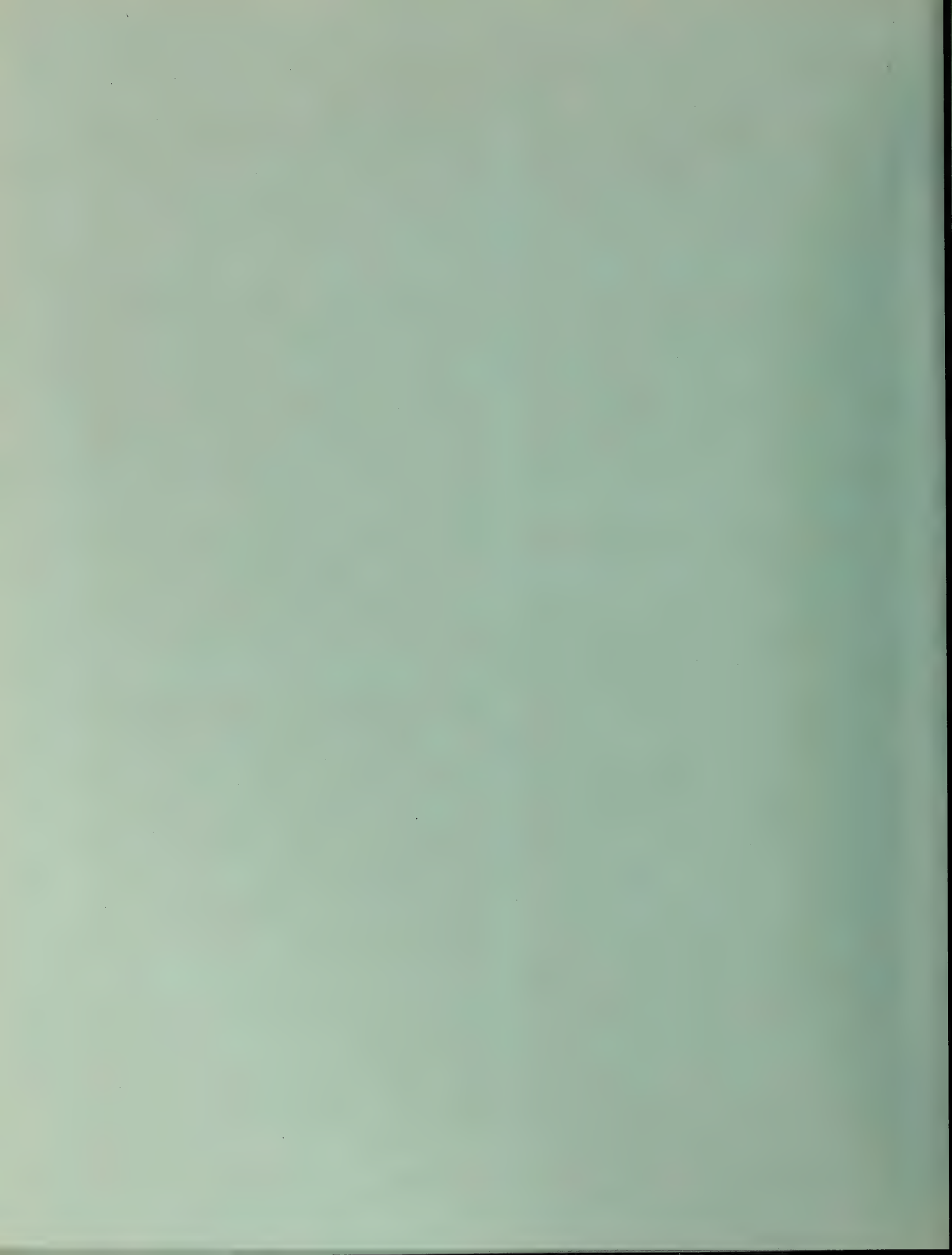
As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

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## Appendix

### EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

**U.S. DEPARTMENT OF COMMERCE  
BUREAU OF THE CENSUS  
WASHINGTON, D.C. 20233**

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**OFFICIAL BUSINESS**

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# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

### Dolls

SIC Code 3942

preliminary  
report

The Dolls Industry includes establishments primarily engaged in manufacturing dolls, doll parts, and doll clothing. Establishments primarily engaged in manufacturing stuffed toy animals are also included in this industry.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Dolls Industry amounted to \$162.8 million, a decrease of 34 percent compared with 1963. Value added by manufacture at \$82.8 million in 1967 was 40 percent less than value

added in 1963. Average employment in the industry showed a decrease of 27 percent from 1963 to a total of 11.9 thousand employees in 1967.

Of the \$163 million total value of shipments and other receipts of establishments classified in the Dolls Industry, less than \$1 million were products primary to other industries; and \$10 million were receipts for miscellaneous activities. The industry shipments of primary products represented 99 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was between 80 and 85 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3942.--DOLLS														
1967 Census....	340	138	11.9	46.4	10.7	18.4	34.3	82.8	80.0	162.8	2.4	16.4	99+	70
1966 ASM <sup>1</sup> .....	(NA)	(NA)	11.6	41.2	10.5	18.5	32.0	74.7	75.4	150.2	1.6	14.0	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	12.8	45.4	11.5	19.9	34.4	83.7	78.7	161.6	2.8	16.2	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	13.4	47.3	12.3	21.4	36.5	93.3	80.6	173.0	*1.9	17.3	(NA)	(NA)
1963 Census....	410	160	16.2	59.0	13.9	24.4	41.8	138.1	114.4	247.9	6.3	27.2	80-85	87
1962 ASM <sup>1</sup> .....	(NA)	(NA)	18.3	62.3	16.9	28.5	46.7	148.9	130.8	273.6	9.5	34.9	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	16.2	51.1	15.5	24.5	36.9	97.3	98.1	194.7	2.2	18.5	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	14.7	47.1	12.9	23.2	34.6	85.8	94.3	178.3	*2.1	14.9	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	14.2	43.8	12.5	22.7	33.2	82.1	85.6	168.2	*2.9	12.0	(NA)	(NA)
1958 Census <sup>2</sup> ...	485	162	13.9	44.0	12.2	22.7	33.9	77.1	85.1	161.9	5.5	12.7	98	94

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 3 and 3, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director

The total value of dolls shipped by all producers in 1967 was \$216.9 million of which \$153 million, or 70 percent, were shipped by plants classified in industry 3942, Dolls, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 87 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967										1963		
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
	INDUSTRY 3942.--DOLLS												
United States, total.....	340	138	11.9	46.4	10.7	18.4	34.3	82.8	80.0	162.8	2.4	16.2	138.1
Northeast.....	274	115	9.5	37.4	8.6	14.8	28.0	67.0	67.8	135.1	1.9	10.8	70.7
New Jersey.....	13	6	0.6	2.7	0.5	0.8	1.7	5.2	6.7	11.7	0.2	0.7	4.1
North Central.....	18	9	0.8	2.8	0.7	1.2	2.0	4.4	3.6	7.9	0.2	0.8	3.1

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (million units)	Value (\$1,000)	Quantity (million units)	Value (\$1,000)
3942- --	DOLLS, TOTAL.....	(X)	216.9	(X)	190.4
	Dolls:				
	Dolls, complete, made of rubber, plastic, or similar materials (except stuffed dolls):				
39420 06	Regular size, over 12 inches.....	41.9	94.5	25.7	63.4
39420 07	Miniature, 12 inches and under.....	16.0	18.9	13.5	19.2
39420 08	Stuffed dolls.....	6.7	12.2	6.6	13.8
39420 16	Doll parts.....	(X)	16.5	(X)	15.3
39420 18	Doll clothes and accessories.....	(X)	6.2	(X)	13.9
39420 53	Stuffed toy animals.....	29.0	43.4	28.4	38.5
39420 55	Other stuffed toys, including puppets.....	(X)	4.6	(X)	4.3
39420 00	Dolls and stuffed toy animals, n.s.k. (For establishments with 10 or more employees. See Note.).....	(X)	15.3	(X)	22.0
39420 02	Dolls and stuffed toy animals, n.s.k. (For establishments with less than 10 employees. See Note.).....	(X)	5.3		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind. (X) Not applicable.

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Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3942.--DOLLS					
	Materials, components, parts, containers, and supplies, total .....		(X)	66.7	(X)	79.4
	Mill shapes and forms:					
331001	Carbon steel.....	1,000 short tons.	(NA)	0.2	{	1.5
331020	Alloy steel.....	do.....				
331031	Stainless steel.....	do.....				
335208	Aluminum and aluminum-base alloy.....	Million lbs.....	(1)	(1)	(1)	(1)
335121	Copper and copper-base alloy.....	do.....	(1)	(1)	(1)	(1)
282130	Thermoplastic resins, including modified resins.....	Million lbs.....	12.5	3.1	15.6	4.9
282140	Thermosetting resins.....	do.....	(1)	(1)	(1)	(1)
220123	Broadwoven fabrics (cotton, wool, manmade fiber fabrics, etc.)...	Million lin. yds.	(NA)	13.2	11.5	8.2
265001	Paperboard containers and boxes.....	do.....	(X)	3.1	(X)	6.4
362115	Fractional horsepower electric motors (under 1 hp.) (excluding timing motors).....	1,000.....	(1)	(1)	(1)	(1)
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	24.2	(X)	35.2
976000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> .....		(X)	22.5	(X)	24.2

- Represents zero. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Included with material code 970099, "all other materials and components, etc." to avoid disclosing figures for individual companies.

<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

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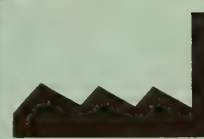
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# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

**preliminary  
report**

### Children's vehicles, except bicycles

SIC Code 3943

The Children's Vehicles, Except Bicycles, Industry includes establishments primarily engaged in manufacturing baby carriages, strollers, and go-carts; children's velocipedes and tricycles, coaster wagons, play cars, sleds, and other children's outdoor wheel goods and vehicles, except bicycles. (industry 3751).

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classi-

fied in the Children's Vehicles, Except Bicycles, Industry amounted to \$81.5 million, an increase of 5 percent compared with 1963. Value added by manufacture at \$39.1 million in 1967 was 10 percent more than value added in 1963. Average employment in the industry showed a decrease of 20 percent from 1963 to a total of 3.8 thousand employees in 1967.

Of the \$81.5 million total value of shipments and other receipts of establishments classified as children's vehicles, except bicycles, \$13 million were products primary to other industries; and \$4 million were receipts for miscellaneous activities. The industry shipments of primary products

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total	With 20 employees or more (number)	Number	Payroll (million dollars)	Number	Man-hours (millions)	Wages (million dollars)							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)							
INDUSTRY 3943.--CHILDREN'S VEHICLES, EXCEPT BICYCLES														
1967 Census....	46	24	3.8	19.9	3.2	6.7	14.2	39.1	43.2	81.5	3.7	14.2	83	69
1966 ASM <sup>1</sup> .....	(NA)	(NA)	5.0	24.1	4.2	8.7	17.0	47.8	49.7	95.8	4.8	14.7	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	5.6	24.8	4.7	9.3	18.3	44.5	57.1	101.2	2.3	14.0	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	3.9	18.0	3.2	6.4	12.6	32.8	36.1	69.6	*3.5	10.2	(NA)	(NA)
1963 Census.....	64	31	4.5	19.4	3.8	7.6	14.3	35.3	41.6	77.5	1.9	11.7	71	65
1962 ASM <sup>1</sup> .....	(NA)	(NA)	4.4	19.2	3.7	8.2	14.6	31.8	43.8	75.5	1.3	12.0	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	4.3	19.9	3.7	8.1	15.4	31.2	36.7	67.4	2.5	11.5	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	4.8	21.4	4.1	8.5	16.7	34.0	41.5	75.2	1.2	11.5	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	5.0	22.0	4.3	8.3	17.2	34.0	45.5	78.7	*1.8	12.6	(NA)	(NA)
1958 Census <sup>2</sup> ...	58	33	4.7	19.6	3.9	7.7	14.9	31.7	38.5	70.4	0.8	10.4	84	78

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 10 and 9, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

**BUREAU OF THE CENSUS** George Hay Brown, Director

represented 83 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 71 percent in 1963.

The total value of children's vehicles, except bicycles, shipped by all producers in 1967 was \$93.9 million of which \$65 million, or 69 percent, were shipped by plants classified in industry 3943, Children's Vehicles, Except Bicycles, while the remainder was shipped by plants

classified in other industries. This percent, called the coverage ratio, was 65 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
INDUSTRY 3943.—CHILDREN'S VEHICLES, EXCEPT BICYCLES													
United States, total.....	46	24	3.8	19.9	3.2	6.7	14.2	39.1	43.2	81.5	3.7	4.5	35.3
Northeast.....	19	9	1.0	5.0	0.8	1.9	3.3	8.4	10.7	19.2	0.4	1.6	9.6
New York.....	9	5	0.5	2.4	0.5	1.0	1.8	4.1	4.5	8.6	(D)	0.8	4.9
North Central.....	15	8	1.7	9.7	1.4	2.9	7.1	19.9	19.5	39.2	3.0	2.3	20.4

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000 units)	Value (million dollars)	Quantity (1,000 units)	Value (million dollars)
3943- --	CHILDREN'S VEHICLES, EXCEPT BICYCLES, TOTAL.....	(X)	93.9	(X)	82.7
39430 11	Baby carriages, including combination carriage-strollers.....	320	8.2	329	7.4
39430 15	Strollers.....	1,454	15.0	1,023	12.6
39430 21	Baby walkers.....	978	3.3	612	4.4
39430 33	Children's pedal driven automobiles and tractors.....	1,019	9.7	1,055	9.8
39430 43	Velocipedes (3-wheeled) and tricycles; including chain-driven tricycles...	3,132	22.6	3,113	20.8
39430 61	Children's wagons (coaster, express, and other).....	(X)	( <sup>1</sup> )	2,562	8.6
39430 71	Sleds.....	997	4.1	1,271	5.3
39430 81	Parts for children's vehicles, sold separately.....	(X)	1.6	(X)	2.2
39430 98	Other children's vehicles, including scooters, sidewalk cycles, 3-wheel play cars, etc.....	(X)	<sup>1</sup> 27.3	(X)	9.9
39430 00	Children's vehicles, except bicycles, n.s.k.....	(X)	2.1	(X)	1.8

n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Data for children's wagons are included with product code 39430 98 "Other children's vehicles...." to avoid disclosing figures for individual companies

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3943.--CHILDREN'S VEHICLES, EXCEPT BICYCLES					
	Materials, components, parts, containers, and supplies, total .....		(X)	38.2	(X)	39.0
	Mill shapes and forms:					
331001	Carbon steel.....	1,000 short tons.				
331020	Alloy steel.....	..do.....	51.9	10.9	38.1	7.7
331031	Stainless steel.....	..do.....				
335208	Aluminum and aluminum-base alloy.....	Million lbs.....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
335121	Copper and copper-base alloy.....	..do.....	-	-	( <sup>2</sup> )	( <sup>2</sup> )
282130	Thermoplastic resins including modified resins.....	..do.....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
282140	Thermosetting resins.....	..do.....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
220123	Broadwoven fabrics (cotton, wool, manmade fiber fabrics, etc.)...	Million lin. yds.	( <sup>1</sup> )	( <sup>1</sup> )	1.3	0.8
331100	Leather, finished.....	Million lbs.....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
265001	Paperboard containers and boxes.....	..do.....	(X)	2.5	(X)	1.6
362115	Fractional horsepower electric motors (under 1 hp.), (excluding timing motors).....	1,000.....	-	-	( <sup>2</sup> )	( <sup>2</sup> )
970099	All other materials and components, parts, containers, and supplies consumed.....	..do.....	(X)	21.2	(X)	19.9
976000	Materials, parts, containers, and supplies, n.s.k. <sup>3</sup> .....	..do.....	(X)	3.6	(X)	9.1

- Represents zero. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Included with material code 970099, "All other materials and components...." to avoid disclosing figures for individual companies.

<sup>2</sup>Included with material code 970099, "All other materials and components...."

<sup>3</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3943, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.

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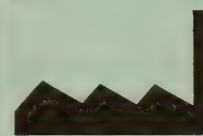
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OFFICIAL BUSINESS



# 1967 CENSUS OF MANUFACTURES



MCG/P-39B-5

## INDUSTRY SERIES

### Sporting and athletic goods, n.e.c.

SIC Code 3949

**preliminary  
report**

The Sporting and Athletic Goods, Not Elsewhere Classified, Industry includes establishments primarily engaged in manufacturing sporting and athletic goods, not elsewhere classified, such as fishing tackle; golf and tennis goods; baseball, football, basketball, and boxing equipment; roller skates and ice skates; gymnasium and playground equipment; billiard and pool tables; and bowling alleys and equipment. Establishments primarily engaged in manufacturing athletic apparel are classified in Major Group 23, small arms ammunition in industry 1961, and firearms in industry 1951.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Sporting and Athletic Goods, N.E.C., Industry amounted to \$857.2 million, an increase of 22 percent compared with 1963. Value added by manufacture at \$472.8 million in 1967 was 31 percent more than value added in 1963. Average employment in the industry showed an increase of 12 percent from 1963 to a total of 45.5 thousand employees in 1967.

Of the \$857.2 million total value of shipments and other receipts of establishments classified as sporting and athletic goods, n.e.c., \$57 million were products primary to other industries; and \$53 million were receipts for miscellaneous activities. The industry shipments of primary products represented 93 percent of

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3949.--SPORTING AND ATHLETIC GOODS, N. E. C.														
1967 Census....	1,368	385	45.5	229.5	37.5	72.4	160.9	472.8	406.4	857.2	22.5	217.5	93	91
1966 ASM <sup>1</sup> .....	(NA)	(NA)	39.4	202.5	31.5	61.8	142.8	423.8	402.8	805.1	22.4	196.7	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	41.2	193.3	32.4	63.3	136.2	387.7	393.4	816.7	17.4	187.4	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	39.9	182.9	31.8	63.3	127.7	380.4	344.0	725.6	17.6	170.0	(NA)	(NA)
1963 Census....	1,419	345	40.5	175.8	32.5	62.7	123.3	361.0	346.0	704.7	15.3	175.1	93	91
1962 ASM <sup>1</sup> .....	(NA)	(NA)	36.7	165.0	29.4	56.9	107.1	358.6	345.7	697.8	18.7	177.1	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	38.7	162.1	31.1	58.5	107.8	369.7	378.7	773.5	15.1	154.7	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	39.9	168.0	31.9	60.6	110.3	383.9	368.4	726.5	12.8	179.3	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	38.0	161.0	31.3	61.6	110.4	332.2	329.7	649.5	17.5	146.8	(NA)	(NA)
1958 Census <sup>2</sup> ...	1,210	302	37.2	148.5	29.7	57.4	104.3	314.1	269.5	577.8	15.1	127.6	88	91

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available. n.e.c. Not elsewhere classified.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 8 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

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the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was also 93 percent in 1963.

The total value of sporting and athletic goods, n.e.c., shipped by all producers in 1967 was \$816.9 million of which \$747 million, or 91 percent, were shipped by plants classified in industry 3949, Sporting and Athletic Goods, N.E.C., while the remainder was shipped by

plants classified in other industries. This percent, called the coverage ratio, was also 91 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967										1963		
	Establishments		All employees		Production workers			Value added by manufacture  (million dollars)	Cost of materials  (million dollars)	Value of shipments  (million dollars)	Capital expenditures, new  (million dollars)	All employees  (1,000)	Value added by manufacture  (million dollars)
	Total  (number)	With 20 employees or more  (number)	Number  (1,000)	Payroll  (million dollars)	Number  (1,000)	Man-hours  (millions)	Wages  (million dollars)						
INDUSTRY 3949, --SPORTING AND ATHLETIC GOODS, N. E. C.													
United States, total.....	1,368	385	45.5	229.5	37.5	72.4	160.9	472.8	406.4	857.2	22.5	40.5	361.0
New England.....	94	32	4.5	23.5	3.8	7.3	18.1	43.1	37.7	81.2	1.5	5.4	49.5
Maine.....	12	2	0.1	0.4	0.1	0.2	0.3	0.7	0.8	1.5	(D)	0.4	2.2
Vermont.....	7	3	0.2	0.7	0.1	0.2	0.5	1.5	1.8	3.3	0.1	(D)	(D)
Massachusetts.....	37	11	3.1	16.5	2.6	5.0	13.1	31.5	26.3	58.2	1.1	3.8	37.9
Rhode Island.....	13	5	0.2	1.1	0.2	0.4	0.8	2.2	1.9	3.9	(D)	0.8	6.3
Middle Atlantic.....	217	78	6.7	31.8	5.6	11.0	22.9	60.2	69.1	126.0	2.6	6.3	44.4
New Jersey.....	38	14	1.0	5.0	0.9	1.7	3.8	9.2	10.6	19.9	0.3	(D)	(D)
East North Central....	329	102	12.9	72.0	10.0	19.7	47.6	143.0	120.3	254.4	5.2	12.5	136.5
Ohio.....	59	16	3.9	24.3	2.6	5.1	14.0	50.0	41.1	83.8	0.7	3.7	25.6
Indiana.....	25	8	0.6	3.0	0.5	1.0	2.1	5.7	3.7	9.4	0.2	0.7	5.3
Illinois.....	98	33	3.7	18.9	3.1	5.9	14.3	35.8	36.7	71.3	1.5	3.2	29.6
Michigan.....	92	26	3.2	19.2	2.5	5.1	12.5	37.7	28.1	65.6	2.4	3.6	66.9
Wisconsin.....	56	20	1.5	6.6	1.3	2.6	4.7	13.9	10.7	24.4	0.4	1.4	9.2
West North Central....	128	39	3.7	16.9	3.2	5.9	12.2	39.5	33.0	70.7	2.7	3.7	25.6
Minnesota.....	41	15	1.4	6.0	1.2	2.1	4.4	13.7	15.6	28.3	1.0	0.9	8.3
Iowa.....	23	7	1.2	5.5	1.0	1.9	4.0	14.1	6.7	20.1	0.9	1.1	8.8
Missouri.....	36	11	0.8	3.7	0.7	1.3	2.7	8.9	8.2	17.2	0.5	1.5	7.2
Kansas.....	15	2	0.2	0.7	0.1	0.2	0.5	1.0	0.8	1.8	(Z)	(D)	(D)
South Atlantic.....	123	23	5.0	24.6	4.1	8.2	17.4	52.7	35.6	85.7	2.9	3.7	35.0
North Carolina.....	13	-	0.1	0.2	0.1	0.1	0.1	1.0	0.9	2.0	(Z)	(D)	(D)
East South Central....	57	19	2.9	15.2	2.5	4.7	10.7	33.0	24.0	53.5	2.1	1.8	11.5
West South Central....	117	29	3.7	15.4	3.1	6.0	11.1	35.5	36.0	71.7	3.1	2.6	20.3
Texas.....	69	17	1.3	5.9	1.0	1.9	3.7	13.0	9.4	22.0	0.6	1.0	6.8
Mountain.....	45	5	1.1	3.9	1.0	1.8	3.3	7.2	3.2	9.7	0.1	0.8	3.6
Pacific.....	258	58	5.1	26.2	4.1	7.8	17.6	58.7	47.4	104.3	2.3	3.7	34.5
California.....	194	47	4.2	22.7	3.4	6.6	15.1	50.6	41.4	90.3	1.9	3.1	30.6

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

n.e.c. Not elsewhere classified.

(Z) Less than \$50 thousand.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3949- --	SPORTING AND ATHLETIC GOODS, N.E.C., TOTAL.....		(X)	816.9	(X)	655.5
39491 --	Fishing tackle and equipment, total.....		(X)	<sup>1</sup> 111.0	(X)	96.9
39491 14	Fishing rods, all types.....	1,000.....	7,012	29.8	7,953	24.1
39491 15	Fishing reels.....	do.....	7,209	30.1	5,981	24.1
39491 16	Fishing hooks, including snelled hooks; casting plugs, spinners and spoons, flies, lures, and similar artificial baits.....		(X)	24.0	(X)	17.4
39491 19	Other fishing tackle, including floats, furnished lines, sinkers, snap swivels, etc.....		(X)	24.3	(X)	24.9
39491 00	Fishing tackle and equipment, n.s.k.....		(X)	2.8	(X)	6.4
39492 --	Golf equipment, total.....		(X)	156.9	(X)	116.9
39492 31	Golf balls.....	1,000 dozen....	10,363	47.0	6,696	33.1
	Golf clubs:					
39492 41	Irons.....	1,000.....	7,600	44.0	6,915	33.0
39492 45	Woods.....	do.....	3,742	27.7	2,874	18.8
39492 47	Golfbags.....	do.....	1,072	11.3		
39492 98	Other golf equipment, such as carts for carrying golf bags, shafts sold as such, etc. (excluding shoes and other accessories).....		(X)	23.1	(X)	32.0
39492 00	Golf equipment, n.s.k.....		(X)	3.8	(X)	( <sup>2</sup> )
39493 --	Other sporting and athletic goods, total.....		(X)	455.0	(X)	408.5
39493 11	Billiard and pool tables.....	1,000.....	364	52.3		
39493 15	Billiard and pool supplies (such as balls, cues, etc.) sold separately.....		(X)	5.4	(X)	37.2
39493 25	Bowling alleys.....	1,000.....	(NA)	5.1	(NA)	18.8
	Bowling alley playing supplies:					
39493 28	Bowling balls.....	do.....	(NA)	24.4	1,559	16.9
39493 29	Other bowling alley playing supplies, including pins, bowling pinsetters, etc.....		(X)	40.9	(X)	85.7
39493 31	Baseballs.....	1,000 dozen....	655	8.4	793	8.0
39493 33	Softballs and indoor type baseballs.....	do.....	398	4.2	277	4.4
39493 35	Baseball bats, including softball bats.....	1,000.....	7,404	9.7	6,904	9.8
39493 37	Baseball mitts and gloves.....	1,000 dozen....	73	6.4	142	10.8
39493 41	Football.....	do.....	(NA)	10.5	156	6.6
39493 43	Basketballs.....	do.....	276	11.5	187	8.0
39493 49	Inflatable athletic balls other than footballs and basketballs (including soccerballs, volleyballs, etc.).....	do.....	(NA)	7.6	163	7.0
39493 51	Sidewalk and rink roller skates.....	1,000 pairs....	2,012	7.5	2,304	7.5
39493 55	Ice skates.....	do.....	1,572	7.5	2,219	11.0
39493 61	Playground equipment, including rebound tumbling equipment, gymnasium equipment, and health and exercising equipment.....		(X)	66.7	(X)	46.1
39493 71	Snow skis.....		(X)	17.5	(X)	8.9
39493 73	Winter sports equipment, such as snow ski poles, bobsleds, toboggans, hockey goods (excluding athletic clothing, shoes, children's sleds, and skis).....		(X)	6.8	(X)	5.2
39493 75	Water skis.....		(X)	4.2	(X)	3.6
39493 77	Underwater sports equipment (scuba) skin diving equipment, such as aqualungs and attachments, face masks, fins, etc. (excluding clothing, watches, and cameras).....		(X)	13.8	(X)	5.3
39493 81	Tennis, badminton, and related equipment, including tennis balls, rackets, and frames, shuttle cocks, squash equipment, and other supplies.....		(X)	11.2	(X)	9.7
39493 85	Archery equipment.....		(X)	22.2	(X)	12.4
39493 98	Other sporting and athletic goods, including boxing gloves, table tennis goods, water skiing equipment (except skis) wading pools, etc., but excluding athletic clothing and shoes.....		(X)	103.8	(X)	70.5
39493 00	Other sporting and athletic goods, n.s.k.....		(X)	8.4	(X)	<sup>2</sup> 15.0
39490 00	Sporting and athletic goods, n.s.k. (For companies with 10 or more employees. See Note.).....		(X)	66.7		
39490 02	Sporting and athletic goods, n.s.k. (For companies with less than 10 employees. See Note.).....		(X)	26.4	(X)	33.2

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.e.c. Not elsewhere classified. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>The 1966 total for this product class has been revised from \$133.7 million to \$113.7 million.

<sup>2</sup>1963 data for product code 3949200 is included with product code 3949300.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3949.—SPORTING AND ATHLETIC GOODS, N.E.C.					
	Materials, components, parts, containers, and supplies, total		(X)	360.9	(X)	293.4
	Mill shapes and forms:					
331001	Carbon steel.....	1,000 short tons.	66.3	18.6	78.1	15.7
331020	Alloy steel.....	..do.....	9.8	4.9	5.5	4.3
331031	Stainless steel.....	..do.....	2.0	2.1	1.5	1.9
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate and foil.....	Million lbs.....	4.1	2.0	9.4	5.1
335202	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	..do.....	18.9	8.5		
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.).....	..do.....	2.9	1.6		
335121	Copper and copper-base alloy.....	..do.....	3.3	2.9	2.4	2.0
336100	Aluminum and aluminum-base alloy castings <sup>1</sup> .....	..do.....	2.7	2.3	(NA)	(NA)
282130	Thermoplastic resins, including modified resins.....	..do.....	41.7	13.7	11.5	4.6
282140	Thermosetting resins.....	..do.....	11.4	3.4	6.4	2.3
220123	Broadwoven fabrics (cotton, wool, manmade fiber fabrics, etc.)...	Million lin. yds.	(NA)	8.2	17.5	9.0
311100	Leather, finished.....	Million lbs.....	9.6	11.9	8.2	14.3
265011	Paperboard containers and boxes.....	.....	(X)	9.9	(X)	9.0
362115	Fractional horsepower electric motors (under 1 hp.) (excluding timing motors) <sup>1</sup> .....	1,000.....	283.3	4.8	69.0	2.1
970099	All other materials and components, parts, containers, and supplies consumed.....	.....	(X)	190.1	(X)	175.6
976000	Materials, parts, containers, and supplies, n.s.k. <sup>2</sup> .....	.....	(X)	76.0	(X)	47.6

(NA) Not available. n.e.c. Not elsewhere classified. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>No data are available for the quantities of aluminum and aluminum-base alloy castings and fractional horsepower electric motors produced and consumed in the same establishment.<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3949, these small establishments accounted for approximately 3 percent of payrolls and 3 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--** All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--** This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--** This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--** The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--** In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--** The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

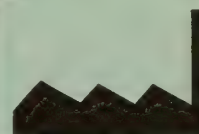
**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

**preliminary  
report**

### Pens and mechanical pencils SIC Code 3951

The Pens, Pen Points, Fountain Pens, Ball Point Pens, Mechanical Pencils, and Parts Industry includes establishments primarily engaged in manufacturing pens, penpoints, fountain pens, ball point pens, refill cartridges, and parts for pens and mechanical pencils.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Pens and Mechanical Pencils Industry amounted to \$210.8 million, an increase of 14

percent compared with 1963. Value added by manufacture at \$139.9 million in 1967 was 17 percent more than value added in 1963. Average employment in the industry showed an increase of 2 percent from 1963 to a total of 11.8 thousand employees in 1967.

Of the \$210.8 million total value of shipments and other receipts of establishments classified as pens and mechanical pencils, \$15 million were products primary to other industries; and \$4 million were receipts for miscellaneous activities. The industry shipments of primary products represented 92 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 90 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
INDUSTRY 3951.--PENS AND MECHANICAL PENCILS														
1967 Census....	119	60	11.8	62.5	9.2	18.0	38.4	139.9	73.6	210.8	6.8	37.1	92	91
1966 ASM <sup>1</sup> .....	(NA)	(NA)	12.3	63.4	10.1	19.8	39.4	145.7	72.5	216.4	5.2	35.9	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	12.2	58.7	9.4	18.3	35.9	131.6	70.3	200.7	6.4	34.2	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	11.3	54.6	8.6	17.7	33.4	115.9	68.2	184.6	4.4	31.5	(NA)	(NA)
1963 Census.....	139	67	11.6	55.0	9.1	17.9	33.9	119.1	66.6	185.5	4.1	29.5	90	93
1962 ASM <sup>1</sup> .....	(NA)	(NA)	10.5	48.6	8.1	15.7	29.0	109.8	70.2	180.9	*6.1	29.3	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	10.2	44.4	7.8	15.2	27.1	96.7	70.0	169.6	*5.5	27.0	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	11.1	46.1	8.7	17.4	29.0	96.0	70.8	168.5	3.8	27.4	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	10.9	44.2	8.6	16.7	27.6	92.9	60.1	152.8	2.9	26.3	(NA)	(NA)
1958 Census <sup>2</sup> ...	147	66	11.2	45.9	8.5	16.2	27.9	90.2	58.0	150.3	3.8	26.2	93	93

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 3 and 3, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

**BUREAU OF THE CENSUS** George Hay Brown, Director

## 1967 CENSUS OF MANUFACTURES

The total value of pens and mechanical pencils shipped by all producers in 1967 was \$209.0 million of which \$192 million, or 91 percent, were shipped by plants classified in industry 3591, Pens and Mechanical Pencils, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 93 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
	INDUSTRY 3951.--PENS AND MECHANICAL PENCILS												
United States, Total.....	119	60	11.8	62.5	9.2	18.0	38.4	139.9	73.6	210.8	6.8	11.6	119.1
Northeast.....	73	36	4.9	22.3	4.2	7.8	15.4	63.9	35.6	97.8	2.7	4.6	41.2
New York.....	47	21	2.1	8.2	1.9	3.3	6.3	18.8	17.9	36.5	0.6	7.4	12.8
New Jersey.....	15	8	1.4	6.0	1.3	2.5	4.3	14.3	9.8	24.1	0.8	(D)	(D)
South.....	10	5	1.7	8.0	1.4	2.8	4.6	15.2	7.7	22.9	(D)	1.6	15.9

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3951- --	PENS AND MECHANICAL PENCILS, TOTAL.....		(X)	209.0	(X)	177.7
	Pens:					
	Fountain pens, complete (all types, except ball point) (retail price):					
39510 01	\$1.00 each and under.....	million units.	26.4	19.5	42.8	8.3
39510 05	\$1.01 to \$5.00 each.....	..do.....			6.5	8.3
39510 06	Over \$5.00 each.....	..do.....			2.5	9.5
	Ball point type pens, complete (retail price):					
39510 11	\$0.20 each and under.....	..do.....	541.0	32.0	674.2	55.3
39510 12	\$0.21 to \$0.30 each.....	..do.....	174.9	20.1		
39510 15	\$0.31 to \$0.50 each.....	..do.....	143.7	18.7		
39510 16	\$0.51 to \$1.00 each.....	..do.....	18.9	5.8	63.3	26.2
39510 17	\$1.01 to \$2.00 each.....	..do.....	22.4	12.7		
39510 18	\$2.01 and over.....	..do.....	5.8	12.6		
	Soft tip pens (fine point marker):					
39510 21	Fibre-tipped.....	..do.....	54.0	9.1	(NA)	(NA)
39510 23	Porous-tipped.....	..do.....	45.7	6.1		
39510 29	Other.....	..do.....	(X)	0.3		
39510 41	Desk pen sets, including fountain pen type, ball point type, and inkwell reservoir (dip) type.....	..do.....	4.9	7.6	5.0	2.8
	Mechanical pencils (retail price)					
39510 53	\$0.50 each and under.....	..do.....	38.1	7.0	35.7	5.5
39510 55	Over \$0.50 each.....	..do.....	9.2	9.7	18.2	9.2
39510 63	Miscellaneous pen and mechanical pencil parts, for sale separately, such as pen holders, pen points (all types), renewal parts, etc.....		(X)	24.3	(X)	24.5
39510 71	Refill ink cartridges for ball point pens.....		(NA)	13.4	(NA)	20.4
39510 00	Pens, pen points, fountain pens, ball point pens, mechanical pencils and parts, n.s.k. (For establishment with 10 or more employees. See Note.).....		(X)	8.4	(X)	7.8
39510 02	Pens, pen points, fountain pens, ball point pens, mechanical pencils and parts, n.s.k. (For establishments with less than 10 employees. See Note.).....		(X)	1.7		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. (X) Not applicable.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(Not applicable to this report)

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3951, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

**Textile mill products • Apparel and leather • Chemicals, rubber, and plastics • Machinery and equipment • Primary metals • Intermediate metal products • Processed foods • Lumber, furniture, and paper products • Stone, clay, and glass products.**

A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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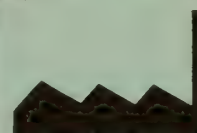
**U. S. DEPARTMENT OF COMMERCE  
Bureau of the Census**







# 1967 CENSUS OF MANUFACTURES



MC67(P)-39C-2

## INDUSTRY SERIES

**preliminary  
report**

### Lead pencils and art goods

SIC Code 3952

The Lead Pencils, Crayons, and Artists' Materials Industry includes establishments primarily engaged in manufacturing lead pencils, pencil leads, and crayons; materials and equipment for art work, such as airbrushes, drawing tables and boards, palettes, sketch boxes, pantographs, artists' colors and waxes, pyrography goods, drawing inks, and drafting materials. Establishments primarily engaged in manufacturing mechanical pencils are classified in industry 3951, and drafting instruments in industry 3811.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Lead Pencils and Art Goods Industry amounted to \$158.9 million, an increase of 30 percent compared with 1963. Value added by manufacture at \$79.8 million in 1967 was 23 percent more than value added in 1963. Average employment in the industry showed an increase of 14 percent from 1963 to a total of 7.9 thousand employees in 1967.

Of the \$158.9 million total value of shipments and other receipts of establishments classified as lead pencils and art goods, \$25 million were products primary to other industries; and \$12 million were receipts for miscellaneous activities. The industry shipments of primary products

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3952.--LEAD PENCILS AND ART GOODS														
1967 Census....	131	59	7.9	42.2	6.0	12.0	24.7	79.8	80.5	158.9	4.6	36.4	83	92
1966 ASM <sup>1</sup> .....	(NA)	(NA)	8.3	40.3	6.4	12.6	24.7	81.2	79.4	159.6	3.2	33.0	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	7.8	37.3	6.0	11.8	22.9	75.5	69.8	145.8	*2.4	28.8	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	7.4	35.7	5.6	10.5	20.2	76.9	62.5	135.5	1.9	30.4	(NA)	(NA)
1963 Census....	144	57	6.9	31.9	5.0	9.8	18.4	64.7	56.8	121.6	1.6	26.4	87	90
1962 ASM <sup>1</sup> .....	(NA)	(NA)	6.0	26.5	4.5	9.5	16.1	57.2	52.4	107.6	1.8	25.0	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	6.3	26.0	4.8	9.6	16.0	54.2	48.8	102.8	1.3	21.6	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	6.4	26.6	4.8	9.8	15.7	54.4	54.6	108.8	1.7	22.9	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	7.1	27.3	5.2	10.1	15.8	53.9	53.5	107.0	*1.0	22.4	(NA)	(NA)
1958 Census <sup>2</sup> ...	146	54	6.7	26.2	4.7	9.4	14.7	47.9	49.1	98.5	2.0	22.0	88	92

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 2, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

Harold C. Passer, Assistant Secretary for Economic Affairs

BUREAU OF THE CENSUS George Hay Brown, Director

represented 83 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 87 percent in 1963.

The total value of lead pencils and art goods shipped by all producers in 1967 was \$133.2 million of which \$122 million, or 92 percent, were shipped by plants classified in industry 3952, Lead Pencils and Art Goods, while the remainder was shipped by plants classified in other indus-

tries. This percent, called the coverage ratio, was 90 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	All employees (1,000)	Value added by manufacture (million dollars)
	Total	With 20 employees or more (number)	Number	Payroll (million dollars)	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
INDUSTRY 3952.--LEAD PENCILS AND ART GOODS													
United States, total.....	131	59	7.9	42.2	6.0	12.0	24.7	79.8	80.5	158.9	4.6	6.9	64.7
Northeast.....	68	30	4.1	23.7	3.0	6.0	13.2	45.7	43.8	89.0	3.3	4.0	39.7
New York.....	36	13	1.0	6.4	0.7	1.5	3.3	9.9	15.7	25.5	0.2	1.2	11.3
Ohio.....	5	4	0.8	4.1	0.5	1.0	2.4	7.7	7.7	15.7	0.2	0.6	5.7
South.....	26	16	2.1	9.3	1.7	3.4	5.9	14.6	19.7	33.6	(D)	(D)	(D)
Tennessee.....	14	11	1.7	7.8	1.4	2.8	4.8	10.9	16.0	26.4	(D)	1.2	8.8
California.....	12	1	0.1	0.4	0.1	0.1	0.3	0.8	0.8	1.6	(Z)	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3952- --	LEAD PENCILS AND ART GOODS, TOTAL.....	.....	(X)	133.2	(X)	107.5
39521 --	Lead pencils and crayons, total.....	.....	(X)	74.0	(X)	65.3
	Nonmechanical pencils, and pencil leads:					
	Pencils:					
39521 11	Black lead.....	Million gross..	15.5	38.6	11.1	31.3
39521 15	Other (indelible, colored, etc.).....	do.....	1.5	7.2	1.4	9.0
39521 23	Pencil leads, including refill leads for mechanical pencils, for sale separately.....	.....	(X)	5.5	(X)	7.0
39521 52	Crayons, except artists' and tailors'.....	.....	(X)	20.4	(X)	17.8
39521 54	Chalk, except artists' and tailors'.....	.....	(X)	2.0		
39521 00	Lead pencils and crayons, n.s.k.....	.....	(X)	0.3		
39522 11	Artists' materials, including airbrushes, drawing tables and boards, palettes, sketch boxes, pantographs, artists' colors and waxes, pyrography goods, drawing inks, and materials.....	.....	(X)	53.8	(X)	40.3
39520 00	Lead pencils, and art goods, n.s.k. (For companies with 10 or more employees. See Note.).....	.....	(X)	3.4	(X)	1.9
39520 02	Lead pencils and art goods, n.s.k. (For companies with less than 10 employees. See Note.).....	.....	(X)	2.0		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind.      <sup>r</sup>Revised.      (X) Not applicable.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(Not applicable to this report)



## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3952, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.

# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--** All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--** This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--** This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--** The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--** In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--** The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





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*Current Industrial Reports present data for industries in the following broad categories:*

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A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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OFFICIAL BUSINESS

# 1967 CENSUS OF MANUFACTURES



MC67(P)-39C-3

## INDUSTRY SERIES

**preliminary  
report**

### Marking devices

SIC Code 3953

The Marking Devices Industry includes establishments primarily engaged in manufacturing rubber and metal hand stamps, dies, and seals; steel letters and figures; and stencils for use in painting or marking.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Marking Devices Industry amounted to \$145.5 million, an increase of 15 percent compared with 1963. Value added by manufacture at \$97.9 million in 1967 was 14 percent more than value added in 1963. Average employment in the

industry showed an increase of 12 percent from 1963 to a total of 8.5 thousand employees in 1967.

Of the \$145.5 million total value of shipments and other receipts of establishments classified as marking devices, \$14 million were products primary to other industries; and \$13 million were receipts for miscellaneous activities. The industry shipments of primary products represented 89 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 84 percent in 1963.

The total value of marking devices shipped by all producers in 1967 was \$130.8 million of which \$119 million, or 91 percent, were shipped

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3953. --MARKING DEVICES														
1967 Census....	602	108	8.5	53.1	5.8	11.1	29.1	97.9	49.8	145.5	6.3	17.7	89	91
1966 ASM <sup>1</sup> .....	(NA)	(NA)	8.7	55.1	5.6	10.9	28.8	101.5	63.3	162.2	*5.8	19.1	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	7.7	45.8	5.4	11.0	26.1	90.8	45.6	135.6	*3.0	15.0	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	8.0	44.0	5.0	11.8	26.2	83.7	45.1	128.1	*3.9	13.4	(NA)	(NA)
1963 Census....	616	90	7.6	41.4	5.3	10.7	24.9	85.6	41.7	126.8	2.2	12.1	84	90
1962 ASM <sup>1</sup> .....	(NA)	(NA)	6.8	34.6	4.5	9.4	20.5	58.8	31.7	89.9	*2.3	9.0	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	6.0	29.6	4.1	8.6	18.1	49.6	24.6	73.9	1.5	6.9	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	5.8	30.2	4.0	8.2	18.5	49.4	25.2	74.4	*1.3	6.5	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	5.7	28.9	4.0	7.9	18.1	48.5	23.4	72.0	*1.3	6.3	(NA)	(NA)
1958 Census <sup>2</sup> ...	525	70	5.4	24.8	3.9	7.4	15.6	39.9	20.0	59.9	1.4	5.9	96	86

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 5 and 7, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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**BUREAU OF THE CENSUS George Hay Brown, Director**



by plants classified in industry 3953, Marking Devices, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 90 percent in 1963.

2, and 4 may be compared with the product statistics in table 3.

These ratios were developed to measure the extent to which the industry statistics in tables 1,

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
	INDUSTRY 3953.--MARKING DEVICES												
United States, total.....	602	108	8.5	53.1	5.8	11.1	29.1	97.9	49.8	145.5	6.3	7.6	85.6
New England.....	54	9	0.6	3.5	0.5	0.8	2.2	6.2	2.2	8.3	0.2	0.8	10.8
Massachusetts.....	33	5	0.4	1.9	0.3	0.5	1.2	3.2	1.3	4.5	0.1	0.6	8.8
Connecticut.....	12	3	0.2	1.1	0.1	0.2	0.7	2.3	0.7	3.0	(D)	0.2	1.4
Middle Atlantic.....	126	28	2.3	14.6	1.6	3.0	8.3	26.1	11.8	37.7	1.2	2.0	17.8
New York.....	66	12	1.1	7.6	0.8	1.5	3.9	13.4	6.0	19.4	0.9	0.9	8.9
New Jersey.....	25	7	0.4	2.1	0.3	0.5	1.4	3.9	2.2	6.0	(D)	(D)	(D)
Pennsylvania.....	35	9	0.8	4.9	0.6	1.0	3.1	8.8	3.6	12.4	(D)	(D)	(D)
East North Central.....	130	33	2.5	16.7	1.8	3.4	9.4	31.5	16.3	47.5	2.1	2.0	19.2
Ohio.....	30	5	0.4	2.5	0.3	0.6	1.5	4.0	1.7	5.7	0.2	(D)	(D)
Illinois.....	52	20	1.6	10.4	1.1	2.1	5.6	20.5	11.7	31.9	1.7	1.2	11.9
Michigan.....	26	6	0.4	2.8	0.3	0.5	1.7	4.9	2.1	7.0	(D)	(D)	(D)
West North Central.....	41	12	0.7	3.7	0.5	0.9	2.3	7.4	3.9	11.1	0.1	0.6	6.5
Missouri.....	15	5	0.3	2.0	0.2	0.4	1.1	3.9	2.7	6.6	0.1	0.3	2.8
South.....	141	14	1.2	5.9	0.9	1.7	3.9	17.3	9.4	24.2	2.5	0.9	9.6
South Atlantic.....	74	10	0.7	3.8	0.6	1.1	2.5	8.0	5.3	11.2	(D)	0.5	6.4
West.....	110	12	1.2	8.6	0.6	1.2	3.1	9.5	6.4	16.7	0.3	1.2	21.9
California.....	70	9	0.9	6.9	0.4	0.8	2.2	6.8	4.9	12.5	(D)	1.0	18.7

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3953- --	MARKING DEVICES, TOTAL.....		(X)	130.8	(X)	107.1
39530 --	Hand stamps, stencils, and other marking devices:					
	Rubber stamps:					
39530 13	Hand stamps.....		(X)	24.7	}	(X) 19.2
39530 15	Permanently-inked stamps.....		(X)	1.5		
39530 31	Metal stamps, marking dies, and seals, including handpresses for seals and marking dies.....		(X)	27.2	(X)	22.3
39530 43	Broad line markers, including felt-tipped, fibre-tipped and porous-tipped.....	Million units.	(NA)	15.5	(NA)	12.9
39530 98	Other marking devices, such as stencils, letters, figures and numerals, stamp pads, branding irons, etc.....		(X)	33.5	(X)	37.1
39530 00	Hand stamps, stencils, and other marking devices, n.s.k. (For companies with 10 or more employees. See Note.).....		(X)	16.1	}	(X) 15.6
39530 02	Hand stamps, stencils, and other marking devices, n.s.k. (For companies with less than 10 employees. See Note.).....		(X)	12.3		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

## 1967 CENSUS OF MANUFACTURES

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(Not applicable to this report)

## SCOPE AND COVERAGE

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In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3953, these small establishments accounted for approximately 6 percent of payrolls and 8 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

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# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

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This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

**Textile mill products • Apparel and leather • Chemicals, rubber, and plastics • Machinery and equipment • Primary metals • Intermediate metal products • Processed foods • Lumber, furniture, and paper products • Stone, clay, and glass products.**

A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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**U. S. DEPARTMENT OF COMMERCE**  
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# 1967 CENSUS OF MANUFACTURES



MC67(P)-39C-4

## INDUSTRY SERIES

### Carbon paper and inked ribbons

SIC Code 3955

**preliminary  
report**

The Carbon Paper and Inked Ribbons Industry includes establishments primarily engaged in manufacturing carbon paper for business machines, sales books, etc.; spirit or gelatin process and other stencil paper; and inked ribbons for business machines.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Carbon Paper and Inked Ribbons Industry amounted to \$206.8 million, an increase of 33 percent compared with 1963. Value added by manufacture at \$93.8 million in 1967 was

37 percent more than value added in 1963. Average employment in the industry showed an increase of 18 percent from 1963 to a total of 6.5 thousand employees in 1967.

Of the \$206.8 million total value of shipments and other receipts of establishments classified as carbon paper and inked ribbons, \$11 million were products primary to other industries; and \$20 million were receipts for miscellaneous activities. The industry shipments of primary products represented 94 percent of the total manufactured product shipments, primary and secondary. This percent called the specialization ratio for the industry, was 95 percent in 1963.

The total value of carbon paper and inked ribbons shipped by all producers in 1967 was

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	INDUSTRY 3955.--CARBON PAPER AND INKED RIBBONS													
1967 Census....	107	63	6.5	41.8	4.4	9.0	23.8	93.8	113.2	206.8	5.3	30.9	94	79
1966 ASM <sup>1</sup> .....	(NA)	(NA)	5.8	36.5	3.8	7.7	20.5	90.0	109.9	196.5	4.0	32.3	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	5.8	35.0	4.0	8.0	20.2	83.7	95.4	177.6	2.4	26.5	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	5.6	33.6	3.9	8.1	18.7	77.9	89.6	166.5	*3.7	26.2	(NA)	(NA)
1963 Census....	102	52	5.5	31.5	3.8	7.7	17.6	68.4	87.0	155.5	2.3	23.3	95	83
1962 ASM <sup>1</sup> .....	(NA)	(NA)	6.5	34.5	4.4	8.8	18.7	73.1	94.0	165.9	*4.2	26.7	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	6.4	32.8	4.3	8.2	17.3	70.4	89.0	158.2	2.2	25.4	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	6.5	33.3	4.4	8.4	17.0	69.3	79.9	148.0	1.9	24.5	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	6.1	30.1	4.1	8.1	16.0	63.8	71.6	136.4	1.7	22.4	(NA)	(NA)
1958 Census <sup>2</sup> ...	103	61	5.8	27.6	3.9	7.9	15.1	59.0	68.0	126.0	2.7	21.9	91	89

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 11 and 4, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued December 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**

\$221.5 million of which \$176 million, or 79 percent, were shipped by plants classified in industry 3955, Carbon Paper and Inked Ribbons, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 83 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture  (million dollars)	Cost of materials  (million dollars)	Value of shipments  (million dollars)	Capital expenditures, new  (million dollars)	All employees  (1,000)	Value added by manufacture  (million dollars)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
	INDUSTRY 3955.--CARBON PAPER AND INKED RIBBONS												
United States, total.....	107	63	6.5	41.8	4.4	9.0	23.8	93.8	113.2	206.8	5.3	5.5	68.4
New England.....	8	7	0.6	3.2	0.4	0.9	2.0	12.2	10.3	22.3	0.4	0.5	9.9
Middle Atlantic.....	37	25	2.9	18.4	2.1	4.2	11.0	37.4	48.2	85.4	2.0	2.8	30.9
New York.....	21	15	1.9	12.6	1.4	2.8	7.0	26.8	32.4	59.1	0.8	1.9	22.7
North Central.....	23	16	1.9	12.3	1.1	2.4	6.8	25.1	30.3	56.4	(D)	1.5	19.0
Illinois.....	12	11	0.7	4.3	0.5	0.9	2.5	11.5	11.4	23.0	(D)	0.6	7.1
South.....	16	6	0.4	2.5	0.3	0.6	1.5	9.7	11.3	20.3	1.1	0.2	2.1
South Atlantic.....	6	3	0.2	1.1	0.2	0.3	0.8	5.9	5.8	10.8	(D)	(D)	(D)
West.....	23	9	0.7	5.4	0.5	0.9	2.5	9.5	13.1	22.4	(D)	0.6	6.5

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.



**TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963**

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3955- --	CARBON PAPER AND INKED RIBBONS, TOTAL.....		(X)	221.5	(X)	161.3
	Inked ribbons:					
39550 12	Typewriter fabric ribbons.....	Million doz...	(NA)	24.0	3.5	24.0
39550 14	Typewriter film ribbons.....	...do.....	(NA)	18.5		
39550 17	Computer (electronic data processing) ribbons.....	...do.....	(NA)	10.2		
39550 19	Other inked ribbons.....	...do.....	(NA)	15.9	1.4	17.0
	Coated carbon paper (in roll and sheet):					
39550 31	One time.....	1,000 tons...	88.2	55.9	(NA)	36.5
39550 35	Other than one time.....	...do.....	(NA)	35.0	(NA)	36.4
39550 61	Stencil paper spirit, and gelatin process master copies (include master sets).....		(X)	26.3	(X)	19.0
39550 98	All other, including mimeograph stencil paper.....		(X)	24.9	(X)	25.6
39550 00	Carbon paper and inked ribbons, n.s.k. (For companies with 10 or more employees. See Note.).....		(X)	9.8	(X)	2.7
39550 02	Carbon paper and inked ribbons, n.s.k. (For companies with less than 10 employees. See Note.).....		(X)	1.0		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

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**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# CURRENT INDUSTRIAL REPORTS

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A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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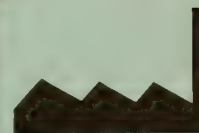
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# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

**preliminary  
report**

### Costume jewelry

SIC Code 3961

The Costume Jewelry and Costume Novelties, Except Precious Metal, Industry includes establishments primarily engaged in the manufacturing of costume jewelry, costume novelties, and ornaments made of all materials, except precious metal, precious or semiprecious stones, and rolled gold plate and gold filled materials (industry 3911).

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Costume Jewelry Industry amounted

to \$376.5 million, an increase of 34 percent compared with 1963. Value added by manufacture at \$220 million in 1967 was 45 percent more than value added in 1963. Average employment in the industry showed an increase of 3 percent from 1963 to a total of 22 thousand employees in 1967.

Of the \$376.5 million total value of shipments and other receipts of establishments classified as costume jewelry, \$15 million were products primary to other industries; and \$52 million were receipts for miscellaneous activities. The industry shipments of primary products represented 96 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 95 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3961.--COSTUME JEWELRY														
1967 Census....	762	206	22.4	106.9	19.4	36.7	73.8	219.7	160.5	376.5	4.4	48.5	96	93
1966 ASM <sup>1</sup> .....	(NA)	(NA)	21.6	94.4	18.5	35.8	65.8	186.7	153.4	335.0	5.8	37.5	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	21.3	89.8	17.6	33.8	60.5	173.8	140.8	313.0	*3.9	32.7	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	21.6	88.1	18.2	35.3	60.9	158.1	137.6	294.3	1.7	34.7	(NA)	(NA)
1963 Census....	912	204	21.7	85.3	18.2	34.5	59.8	151.0	132.4	280.5	3.8	34.2	95	95
1962 ASM <sup>1</sup> .....	(NA)	(NA)	22.3	81.1	18.5	34.7	52.6	136.2	119.3	253.2	1.4	25.4	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	21.9	79.7	18.2	34.7	51.5	132.2	124.1	253.2	1.5	26.8	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	22.0	78.3	18.6	35.5	52.1	132.0	115.8	245.2	*2.2	25.7	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	24.3	80.7	20.7	38.2	55.8	134.2	111.8	245.1	*3.1	29.8	(NA)	(NA)
1958 Census <sup>2</sup> ....	1,051	255	25.3	83.2	21.3	40.0	58.3	138.0	116.0	253.8	5.8	35.2	95	96

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 3 and 3, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

**BUREAU OF THE CENSUS** George Hay Brown, Director

The total value of costume jewelry shipped by all producers in 1967 was \$336.4 million of which \$310 million, or 93 percent, were shipped by plants classified in industry 3961, Costume Jewelry, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 95 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3961.--COSTUME JEWELRY												
United States, total.....	762	206	22.4	106.9	19.4	36.7	73.8	219.7	160.5	376.5	4.4	21.7	151.0
New England.....	303	104	12.7	64.8	11.1	21.2	43.7	132.8	91.0	221.5	2.5	12.7	87.6
Massachusetts.....	35	16	2.9	18.6	2.5	4.5	9.7	52.3	23.5	74.1	(D)	3.2	30.4
Rhode Island.....	257	84	8.1	36.2	7.1	13.6	26.3	65.2	56.2	120.6	2.1	8.2	47.7
Middle Atlantic.....	351	88	8.2	36.3	6.9	13.1	25.6	73.8	59.3	131.9	1.6	7.8	54.4
New York.....	330	81	7.3	32.3	6.1	11.6	22.8	65.8	54.2	119.1	1.2	7.1	49.8
North Central.....	25	5	0.3	1.2	0.2	0.5	0.9	2.5	3.0	5.5	0.1	0.4	2.8
Illinois.....	15	5	0.2	1.1	0.2	0.4	0.8	2.1	2.4	4.5	(D)	0.1	1.5
South.....	27	2	0.5	1.7	0.4	0.8	1.4	4.9	2.3	7.2	(Z)	0.3	2.0
Mountain.....	14	2	0.2	0.6	0.2	0.3	0.5	1.3	0.9	2.2	(D)	0.1	0.4
Pacific.....	42	5	0.5	2.3	0.5	0.9	1.8	4.5	3.9	8.2	(D)	0.4	3.8
California.....	33	5	0.5	2.2	0.5	0.9	1.7	4.1	3.7	7.7	0.1	0.4	3.6

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.

TABLE 3. Value of Shipments by All Producers: 1967 and 1963

(Includes value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Value of shipments including interplant transfers (million dollars)	
		1967	1963
3961- --	COSTUME JEWELRY, TOTAL.....	336.4	256.7
39610 --	Costume jewelry and costume novelties, except precious metal:		
	Base metal, whether or not electroplated with gold, silver, chromium, etc:		
39610 11	Rings and ring mountings.....	( <sup>1</sup> )	2.1
39610 21	Men's jewelry (excluding watch attachments and rings).....	41.9	33.5
39610 31	Women's and children's jewelry and costume novelties (excluding watch attachments and rings)..	104.1	97.8
39610 41	Watch attachments (bracelets for watches).....	20.9	14.6
39610 51	Fraternal, college, and school jewelry and emblems, including military insignia (excluding rings).....	24.5	10.3
39610 61	Religious jewelry, such as rosaries, chaplets, religious medals, crosses, etc.....	4.1	5.5
39610 71	Other jewelry worn or carried about the person, except cigar and cigarette cases and lighters, compacts, and vanity cases.....	5.1	6.0
39610 81	Imitation pearls (including necklaces) made of glass, plastic or other materials.....	11.4	21.3
39610 91	Compacts and vanity cases, except precious metals and all leather.....	10.2	9.5
39610 98	Other costume jewelry and costume novelties made of plastics, wood, leather, etc.....	147.1	21.0
39610 00	Costume jewelry, n.s.k. (For companies with 10 or more employees).....	45.8	35.1
39610 02	Costume jewelry, n.s.k. (For companies with less than 10 employees).....	21.3	

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind.

<sup>1</sup>1967 data for product code 39610 11, "Base metal rings and ring mountings" are included with product code 39610 98, "Other costume jewelry, etc."

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(Not applicable to this report)



## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3961, these small establishments accounted for approximately 4 percent of payrolls and 5 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.

# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# CURRENT INDUSTRIAL REPORTS

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# 1967 CENSUS OF MANUFACTURES

## INDUSTRY SERIES

**preliminary  
report**

### Artificial flowers

SIC Code 3962

The Feathers, Plumes, and Artificial Flowers Industry includes establishments primarily engaged in manufacturing artificial flowers, fruits, and foliage made from all materials except glass (industry 3231); in producing fancy feathers, plumes, and articles made principally of feathers and plumes; and curling, dyeing, and renovating ostrich feathers for the trade.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Artificial Flowers Industry amounted

to \$84.7 million, an increase of 40 percent compared with 1963. Value added by manufacture at \$43.3 million in 1967 was 48 percent more than value added in 1963. Average employment in the industry showed an increase of 4 percent from 1963 to a total of 5.2 thousand employees in 1967.

Of the \$84.7 million total value of shipments and other receipts of establishments classified as artificial flowers, \$5 million were products primary to other industries; and \$7 million were receipts for miscellaneous activities. The industry shipments of primary products represented 94 percent of the total manufactured product

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3962.--ARTIFICIAL FLOWERS														
1967 Census....	321	79	5.2	20.2	4.6	7.9	14.8	43.3	41.4	84.7	0.8	11.2	94	85
1966 ASM <sup>1</sup> .....	(NA)	(NA)	3.8	15.1	3.3	5.7	10.7	36.7	38.4	73.5	*0.8	10.8	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	4.2	15.5	3.6	6.2	11.1	35.7	40.4	74.0	*0.6	11.8	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	4.8	17.0	4.1	7.6	12.6	33.0	32.6	65.6	*0.7	9.9	(NA)	(NA)
1963 Census....	384	70	5.0	16.3	4.3	7.6	12.1	29.2	30.6	60.4	0.7	9.6	97	87
1962 ASM <sup>1</sup> .....	(NA)	(NA)	5.2	15.6	4.4	7.9	10.6	28.2	31.6	59.8	(Z)	8.3	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	5.9	16.9	5.2	9.5	12.0	29.0	34.4	63.5	(Z)	8.1	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	6.6	19.6	5.8	10.5	13.9	32.0	33.3	65.3	*0.6	9.6	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	7.0	19.7	6.0	11.0	14.4	34.7	33.3	67.4	*0.4	9.0	(NA)	(NA)
1958 Census <sup>2</sup> ...	431	101	6.8	19.0	5.9	11.0	14.4	34.6	30.5	65.0	0.9	7.6	98	98

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available. (Z) Less than \$50 thousand.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 8 and 6, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**



shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 97 percent in 1963.

The total value of artificial flowers shipped by all producers in 1967 was \$85.2 million of which \$72 million, or 85 percent, were shipped by plants classified in industry 3962, Artificial Flowers,

while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 87 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

(See appendix, "Explanation of Terms.")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)						
	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)		
	INDUSTRY 3962.--ARTIFICIAL FLOWERS												
United States, total.....	321	79	5.2	20.2	4.6	7.9	14.8	43.3	41.4	84.7	0.8	5.0	29.2
Northeast.....	169	47	3.2	13.1	2.8	4.9	9.6	28.0	26.9	55.2	0.2	3.3	20.4
New York.....	121	31	2.0	8.5	1.8	3.2	6.3	18.1	16.4	35.3	(D)	2.2	13.8
Pennsylvania.....	22	9	0.6	2.3	0.5	0.9	1.6	4.1	6.8	11.5	(D)	0.6	3.5
North Central.....	76	13	0.9	3.3	0.8	1.2	2.2	7.0	7.3	14.2	0.2	0.8	4.0
South Atlantic.....	25	10	0.6	1.6	0.5	0.8	1.3	3.7	3.1	6.7	0.2	0.3	1.5
North Carolina.....	9	4	0.1	0.4	0.1	0.2	0.3	1.2	1.1	2.2	0.1	(D)	(D)
East South Central....	4	3	0.1	0.4	0.1	0.2	0.3	0.8	1.1	1.8	0.1	0.1	0.5
West South Central....	9	2	0.1	0.5	0.1	0.2	0.4	0.8	0.6	1.4	(D)	0.2	1.2
West.....	38	4	0.3	1.3	0.3	0.5	0.9	3.1	2.4	5.5	(D)	0.3	1.6
California.....	29	4	0.3	1.2	0.3	0.5	0.9	2.9	2.2	5.1	(D)	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Value of Shipments by All Producers: 1967 and 1963

(Includes value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Value of shipments including interplant transfers (million dollars)	
		1967	1963
3962- --	FEATHERS, PLUMES, AND ARTIFICIAL FLOWERS (EXCEPT GLASS), TOTAL.....	85.2	59.3
39620 13	Artificial Christmas trees, all types (metal, plastic, etc.).....	32.2	59.3
39620 15	Artificial flowers: Plastic type.....	18.3	
39620 17	Other materials.....	14.1	
39620 21	Feathers and plumes.....	4.2	
39620 00	Feathers, plumes, and artificial flowers, n.s.k. (For companies with 10 or more employees. See Note.).....	10.3	
39620 02	Feathers, plumes, and artificial flowers, n.s.k. (For companies with less than 10 employees. See Note.).....	6.1	

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(Not applicable to this report)

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3962, these small establishments accounted for approximately 7 percent of payrolls and 8 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





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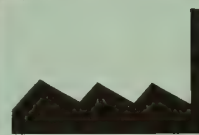
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OFFICIAL BUSINESS



# 1967 CENSUS OF MANUFACTURES



MC67(P)-39C-7

## INDUSTRY SERIES

**preliminary  
report**

### Buttons

SIC Code 3963

The Buttons Industry includes establishments primarily engaged in manufacturing buttons, button parts, and button blanks and molds, of all materials except precious metal and precious or semiprecious stones (industry 3911).

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Buttons Industry amounted to \$80.8 million, a decrease of 1 percent compared with 1963. Value added by manufacture at \$46.1

million in 1967 was 5 percent more than value added in 1963. Average employment in the industry showed a decrease of 14 percent from 1963 to a total of 4.8 thousand employees in 1967.

Of the \$80.8 million total value of shipments and other receipts of establishments classified as buttons, \$3 million were products primary to other industries; and \$3 million were receipts for miscellaneous activities. The industry shipments of primary products represented 96 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was also 96 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
INDUSTRY 3963.--BUTTONS														
1967 Census....	234	62	4.8	23.7	4.1	8.0	16.8	46.1	35.5	80.8	1.2	12.2	96	90
1966 ASM <sup>1</sup> .....	(NA)	(NA)	5.3	24.1	4.5	8.2	16.3	43.2	29.4	72.9	*1.2	11.5	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	5.3	22.2	4.6	8.3	16.2	41.4	29.4	70.6	*1.4	12.4	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	5.2	22.1	4.3	8.6	15.6	50.8	35.4	86.0	*1.0	11.7	(NA)	(NA)
1963 Census....	290	69	5.6	23.0	4.7	9.1	16.5	43.8	37.9	81.8	1.0	11.8	96	87
1962 ASM <sup>1</sup> .....	(NA)	(NA)	5.4	20.5	4.7	9.5	15.8	38.5	33.5	73.9	1.8	10.6	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	5.6	20.1	4.9	9.8	15.1	37.5	32.1	71.6	0.7	10.9	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	5.6	20.4	4.8	9.6	15.3	37.5	31.6	70.8	0.8	11.0	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	6.4	21.1	5.5	10.5	16.1	41.5	32.7	74.5	*1.7	10.9	(NA)	(NA)
1958 Census <sup>2</sup> ...	356	87	6.5	21.5	5.5	10.4	15.8	38.0	30.6	68.6	1.4	11.3	98	88

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 5 and 6, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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**BUREAU OF THE CENSUS George Hay Brown, Director**

The total value of buttons shipped by all producers in 1967 was \$83.1 million of which \$75 million, or 90 percent, were shipped by plants classified in industry 3963, Buttons, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 87 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
INDUSTRY 3963.--BUTTONS													
United States, total.....	234	62	4.8	23.7	4.1	8.0	16.8	46.1	35.5	80.8	1.2	5.6	43.8
Northeast.....	193	52	4.1	20.0	3.5	6.8	14.3	39.3	28.5	67.0	1.0	4.4	34.6
New York.....	163	41	2.8	13.8	2.4	4.6	9.4	28.0	20.8	48.7	(D)	2.9	22.6
New Jersey.....	11	4	0.3	1.5	0.3	0.5	1.2	2.2	1.7	3.9	(Z)	0.5	3.4
North Central.....	15	5	0.4	2.0	0.3	0.5	1.1	3.3	3.8	7.1	(D)	0.7	4.6

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3963--	BUTTONS.....		(X)	83.1	(X)	81.9
	Buttons and parts, except of precious or semiprecious metals and precious or semiprecious stones:					
	Metal:					
39630 11	Sew-on type.....	Million gross.	(NA)	12.6	(NA)	8.0
39630 15	Other metal buttons, including mechanically applied types, etc.....	..do.....	(NA)	6.0	(NA)	4.6
	Plastic:					
39630 21	Casein and casein compound.....	..do.....	(NA)	6.7	3.8	5.0
	Other plastics:					
39630 41	Polyester.....	..do.....	84.4	21.7	97.5	35.4
39630 23	Thermosetting (excluding polyester).....	..do.....	(NA)	6.0		
39630 25	Thermoplastic (including acrylic).....	..do.....	(NA)	1.9		
39630 61	Button blanks or molds, backs, and parts for sale as such.....		(X)	6.7	(X)	11.0
39630 98	Other buttons, fabric covered, wood, bone, and hoof, vegetable ivory, leather, and pearl or shell, etc.....		(X)	4.4	(X)	7.2
39630 00	Buttons, n.s.k. (For companies with 10 or more employees. See Note.).....		(X)	12.4	(X)	10.6
39630 02	Buttons, n.s.k. (For companies with less than 10 employees. See Note.).....		(X)	4.7		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3963.--BUTTONS					
	Materials, components, parts, containers and supplies, total..		(X)	31.0	(X)	33.3
	Mill shapes and forms:					
331001	Carbon steel.....	1,000 short tons.	1.4	0.4	1.5	0.4
331020	Alloy steel.....	..do.....	0.7	0.6	0.2	0.2
331031	Stainless steel.....	..do.....				
335208	Aluminum and aluminum-base alloy.....	Million pounds...	(NA)	0.4	(NA)	0.3
335121	Copper and copper-base alloy.....	..do.....	(NA)	3.5	(D)	(D)
970099	All other materials, and components, parts, containers, and supplies consumed.....		(X)	15.6	(X)	20.6
976000	Materials, etc., n.s.k. <sup>1</sup> .....		(X)	10.5	(X)	11.8

(D) Included with material code 970099, "All other materials, etc." to avoid disclosing figures for individual companies. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

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This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3963, these small establishments accounted for approximately 5 percent of payrolls and 6 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

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More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

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# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

**Textile mill products • Apparel and leather • Chemicals, rubber, and plastics • Machinery and equipment • Primary metals • Intermediate metal products • Processed foods • Lumber, furniture, and paper products • Stone, clay, and glass products.**

A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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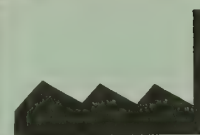
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# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

**preliminary  
report**

### Needles, pins, and fasteners

SIC Code 3964

The Needles, Pins, Hooks and Eyes, and Similar Notions Industry includes establishments primarily engaged in manufacturing notions, such as machine and hand needles, pins, hooks and eyes, eyelets, buckles, and slide and snap fasteners.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Needles, Pins, and Fasteners Industry amounted to \$388.6 million, an increase of 15 percent compared with 1963. Value added by

manufacture at \$220.0 million in 1967 was 15 percent more than value added in 1963. Average employment in the industry showed a decrease of 5 percent from 1963 to a total of 19,5 thousand employees in 1967.

Of the \$388.6 million total value of shipments and other receipts of establishments classified as needles, pins, and fasteners, \$27 million were products primary to other industries; and \$20 million were receipts for miscellaneous activities. The industry shipments of primary products represented 93 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 91 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3964.--NEEDLES, PINS, AND FASTENERS														
1967 Census . . . .	291	139	19.5	102.4	16.1	32.2	71.4	220.0	170.8	388.6	15.3	62.4	93	93
1966 ASM <sup>1</sup> . . . . .	(NA)	(NA)	22.4	108.5	18.5	36.1	76.6	233.5	182.3	409.3	12.6	68.8	(NA)	(NA)
1965 ASM <sup>1</sup> . . . . .	(NA)	(NA)	22.0	103.8	18.1	35.6	73.7	231.6	172.8	398.0	8.4	65.0	(NA)	(NA)
1964 ASM <sup>1</sup> . . . . .	(NA)	(NA)	19.7	96.1	16.1	34.5	68.7	209.3	153.5	356.7	10.2	58.4	(NA)	(NA)
1963 Census . . . . .	343	149	20.3	89.4	16.7	32.6	64.1	190.9	146.1	337.3	7.4	51.8	91	92
1962 ASM <sup>1</sup> . . . . .	(NA)	(NA)	20.7	87.0	17.1	31.9	62.8	188.0	135.7	319.0	7.2	50.3	(NA)	(NA)
1961 ASM <sup>1</sup> . . . . .	(NA)	(NA)	18.4	78.2	15.0	28.6	55.0	161.0	122.1	283.5	*6.1	44.6	(NA)	(NA)
1960 ASM <sup>1</sup> . . . . .	(NA)	(NA)	18.3	75.9	14.8	28.2	53.1	154.2	105.1	255.1	7.2	45.0	(NA)	(NA)
1959 ASM <sup>1</sup> . . . . .	(NA)	(NA)	18.7	76.1	15.2	29.1	52.9	147.0	106.8	251.5	*4.5	41.3	(NA)	(NA)
1958 Census <sup>2</sup> . . . .	367	128	17.8	69.9	14.3	26.7	48.0	127.7	93.6	220.5	4.3	37.4	93	89

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 2 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued November 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**

The total value of needles, pins, and fasteners shipped by all producers in 1967 was \$368.7 million of which \$342 million, or 93 percent, were shipped by plants classified in industry 3964, Needles, Pins, and Fasteners, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 92 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
	INDUSTRY 3964.--NEEDLES, PINS, AND FASTENERS												
United States, total.....	291	139	19.5	102.4	16.1	32.2	71.4	220.0	170.8	388.6	15.3	20.3	190.9
New England.....	49	31	4.6	29.1	3.7	7.3	19.2	48.2	29.4	77.5	4.0	5.7	56.2
Massachusetts.....	10	5	0.6	3.1	0.5	0.9	2.3	5.3	4.2	9.5	(D)	(D)	(D)
Connecticut.....	29	21	3.1	20.9	2.6	5.2	14.1	34.4	17.8	52.1	(D)	4.3	44.6
Middle Atlantic.....	179	71	7.4	39.4	6.0	12.3	27.0	67.3	64.5	131.5	3.1	9.3	71.4
New York.....	163	62	4.8	23.3	4.2	8.6	17.5	46.1	48.6	94.1	1.5	6.1	45.9
North Central.....	22	11	1.9	8.8	1.4	2.7	5.6	19.2	13.9	32.9	1.1	2.1	21.1
Illinois.....	9	7	0.9	4.5	0.6	1.2	2.5	8.3	6.7	14.7	0.2	0.9	8.0
South Atlantic.....	23	12	3.7	16.3	3.4	6.7	13.2	48.0	39.9	86.5	(D)	(D)	(D)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3964- --	NEEDLES, PINS, AND FASTENERS.....		(X)	368.7	(X)	315.2
39641 --	Zipper or slide fasteners (each 12 inches is one unit when sold in continuous chain).....		(X)	201.5	(X)	143.2
39641 21	Nylon and other plastics.....	Million units..	1,268.5	81.9		
	Metal:					
39641 31	Aluminum.....	...do.....	1,066.1	45.8	2,223.4	143.2
39641 33	Brass.....	...do.....	786.0	57.8		
39641 39	Other.....	...do.....	(NA)	14.9		
39641 00	Zipper and slide fasteners, n.s.k.....		(X)	1.1	-	-
39642 --	Needles, pins, fasteners (except slide), and similar notions.....		(X)	141.1	(X)	155.7
	Snap fasteners:					
39642 11	Sew-on type.....	Great gross...	230,197.0	1.0	(NA)	1.0
39642 19	Other snap fasteners (such as 4-part, riveted, or mechanically applied type, etc.).....		(NA)	22.0	(NA)	18.6
39642 21	Metal buckles for wearing apparel, including those covered with fabric or other material, but excluding costume jewelry.....		(X)	12.4	(X)	14.7
39642 31	Other fasteners, buckles (except shoe) and apparel trimming (hooks and eyes, rivets and burrs, trimming, plastic buckles, etc.).....		(X)	15.0	(X)	28.7
39642 41	Tape (hook and eye and snap) fasteners.....	1,000 gross yds.....	141.0	5.4	193.8	7.0
39642 51	Hair curlers (except rubber, and except those designed for beauty parlor use).....		(NA)	29.3	(NA)	31.6
39642 65	Needles, except hypodermic, phonograph, and styli:					
39642 69	Sewing machine (household and industrial dry-thread).....	1,000.....	(NA)	22.4	(NA)	22.3
	Other needles, except phonograph needles and styli (including shoe machine, hand sewing, hand knitting, crocheting, darning, etc.).....					
	Pins (except jewelry):					
39642 81	Common or toilet, including dressmakers' pins.....	1,000 lbs.....	4,427.3	9.5	2,736.0	5.0
39642 83	Hair pins, metal "bobby" type.....	...do.....	6,017.7	9.1	7,134.2	7.9
39642 87	Safety pins.....	Million gross..	14.3	4.5	10.8	3.4
39642 89	Other pins, hat pins, glasshead pins, plastic, and metal hairpins other than metal bobby type, etc.....	...do.....	(NA)	6.0	(X)	5.2
39642 00	Needles, pins, fasteners (except slide) and similar notions, n.s.k.....		(X)	4.5	(X)	10.2
39640 00	Needles, pins, fasteners, n.s.k. (For companies with 10 or more employees. See Note.).....		(X)	20.9	(X)	16.3
39640 02	Needles, pins, and fasteners, n.s.k. (For companies with less than 10 employees. See Note.).....		(X)	5.2		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable. - Represents zero.



## 1967 CENSUS OF MANUFACTURES

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3964.--NEEDLES, PINS, AND FASTENERS					
	Materials, components, parts, containers and supplies, total. ....		(X)	155.7	(X)	131.1
	Mills shapes and forms:					
331001	Carbon steel.....	1,000 short tons...	29.1	8.5	28.0	8.6
331020	Alloy steel.....	..do.....	10.8	2.9	4.4	1.2
331031	Stainless steel.....	..do.....	1.3	2.1	0.7	1.2
335208	Aluminum and aluminum-base alloy.....	Million lbs.....	12.4	6.9	11.0	6.7
335121	Copper and copper-base alloy.....	..do.....	21.7	15.8	18.8	11.7
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	100.0	(X)	79.8
976000	Materials, etc., n.s.k.....		(X)	19.5	(X)	21.9

n.s.k. Not specified by kind. (X) Not applicable.

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**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

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In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

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"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

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**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

**preliminary  
report**

### Brooms and brushes

SIC Code 3991

The Brooms and Brushes Industry includes establishments primarily engaged in manufacturing household, industrial, and street sweeping brooms; and brushes, such as paint brushes, toothbrushes, toilet brushes, and household and industrial brushes.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Brooms and Brushes Industry amounted to \$347.1 million, an increase of 8 percent

compared with 1963. Value added by manufacture at \$178.9 million in 1967 was 7 percent more than value added in 1963. Average employment in the industry showed a decrease of 6 percent from 1963 to a total of 15.8 thousand employees in 1967.

Of the \$347.1 million total value of shipments and other receipts of establishments classified as brooms and brushes, \$16 million were products primary to other industries; and \$69 million were receipts for miscellaneous activities. The industry shipments of primary products represented 94 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 89 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)
INDUSTRY 3991.—BROOMS AND BRUSHES														
1967 Census.....	532	169	15.8	79.8	13.0	24.5	54.5	178.9	165.8	347.1	9.3	65.2	94	89
1966 ASM <sup>1</sup> .....	(NA)	(NA)	17.0	85.3	13.7	27.7	55.5	195.1	185.4	374.4	9.2	82.2	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	17.3	84.2	14.2	27.5	54.1	192.7	181.5	372.3	6.2	76.9	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	17.2	81.7	13.7	26.9	51.9	181.7	169.5	350.6	*7.0	69.2	(NA)	(NA)
1963 Census.....	643	167	16.6	73.6	13.4	25.8	49.5	167.8	153.6	321.1	4.4	66.4	89	93
1962 ASM <sup>1</sup> .....	(NA)	(NA)	16.6	74.4	13.5	25.7	49.4	166.6	144.8	306.9	5.2	72.2	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	16.6	71.0	13.4	25.2	46.8	147.9	143.7	292.9	3.6	68.8	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	16.9	70.6	13.6	26.2	47.1	150.2	143.6	291.3	*6.5	70.5	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	17.6	70.1	14.3	27.3	47.7	155.3	146.4	298.9	*11.5	66.0	(NA)	(NA)
1958 Census <sup>2</sup> ....	723	179	17.1	64.6	13.6	25.6	42.9	137.5	137.1	275.7	4.0	62.8	89	94

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 2 and 4, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued November 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**



The total value of brooms and brushes shipped by all producers in 1967 was \$294.4 million of which \$262 million, or 89 percent, were shipped by plants classified in industry 3991, Brooms and Brushes, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 93 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3991.--BROOMS AND BRUSHES												
United States, total.....	532	169	15.8	79.8	13.0	24.5	54.5	178.9	165.8	347.1	9.3	16.6	167.9
New England.....	44	19	2.1	10.8	1.8	3.4	7.6	44.2	42.4	88.3	1.1	3.2	53.9
Middle Atlantic.....	126	45	3.9	20.4	3.2	6.3	13.9	42.9	36.7	79.7	2.0	5.2	46.7
Pennsylvania.....	28	9	0.5	2.3	0.4	0.8	1.6	4.6	3.9	8.5	0.1	0.6	3.0
Michigan.....	21	4	0.2	1.3	0.2	0.3	0.9	2.3	2.5	4.7	(Z)	(D)	(D)
Wisconsin.....	16	6	0.6	3.4	0.5	1.0	2.3	7.3	6.0	13.4	0.5	0.6	6.3
West North Central....	28	8	1.0	4.7	0.9	1.6	3.4	8.5	6.2	14.8	0.3	1.1	7.1
Missouri.....	6	2	0.1	0.5	0.1	0.2	0.3	0.8	1.0	1.7	(D)	(D)	(D)
South Atlantic.....	71	20	2.0	9.8	1.6	3.2	6.9	17.0	16.7	33.7	(D)	1.6	10.6
Maryland.....	9	6	1.2	6.7	0.9	1.9	4.6	10.8	10.3	21.3	1.6	0.8	6.6
North Carolina.....	24	3	0.3	1.1	0.2	0.4	0.8	2.4	2.4	4.7	(D)	0.2	1.0
Georgia.....	13	3	0.2	0.7	0.1	0.3	0.5	1.4	1.3	2.8	(Z)	0.2	0.9
Florida.....	11	6	0.2	0.9	0.2	0.4	0.6	1.7	1.8	3.5	0.1	0.3	1.4
Tennessee.....	11	4	0.3	0.8	0.2	0.4	0.7	2.0	1.8	3.9	(D)	0.2	1.7
Louisiana.....	15	2	0.1	0.4	0.1	0.2	0.3	0.6	0.9	1.6	(D)	0.1	0.4
Texas.....	34	6	0.6	1.3	0.4	0.6	1.0	1.9	2.3	4.2	0.1	0.3	1.5
Mountain.....	12	1	0.1	0.4	0.1	0.2	0.3	0.8	0.9	1.7	(Z)	0.1	0.5

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.  
(Z) Less than \$50 thousand.

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3991- --	BROOMS AND BRUSHES, TOTAL.....		(X)	294.4	(X)	247.7
39911 --	Brooms, total.....		(X)	37.5	(X)	38.0
39911 13	Household floor brooms.....	1,000 doz.....	1,892.0	23.6	1,765.1	20.5
39911 98	Other brooms (industrial brooms, whiskbrooms, toy brooms, hearth brooms, streetsweeping machine brooms, street brooms, stable brooms, etc.).....		(X)	10.9	(X)	12.7
39911 00	Brooms, n.s.k.....		(X)	3.0	(X)	4.8
39912 --	Paint and varnish brushes, total.....		(X)	88.7	(X)	73.6
	Whitewash, kalsomine, paperhanging, marking and stenciling brushes;					
39912 11	Made of pure bristle.....	1,000 doz.....	3,981.0	30.1	3,731.4	29.1
39912 31	Made of synthetic bristle.....	do.....	5,339.0	28.4	2,592.1	23.5
39912 51	Made of other materials including mixtures.....	do.....	675.1	3.7	498.0	2.4
39912 71	Paint rollers complete units.....	1,000 doz. units.....	(NA)	26.5	1,739.8	16.4
39912 00	Paint and varnish brushes, n.s.k.....		(X)	-	(X)	2.2
39913 --	Other brushes, total.....		(X)	142.6	(X)	126.0
39913 11	Artists' brushes and hair pencils, except artists' airbrushes...	1,000 doz.....	(NA)	6.8	(NA)	5.4
	Personal brushes:					
39913 21	Toothbrushes.....	do.....	15,308.2	19.9	14,376.2	21.8
39913 27	Hairbrushes.....	do.....	(NA)	22.3	2,060.6	17.4
39913 29	Other, including shaving brushes.....		(X)	6.1	(X)	3.3
	Maintenance brushes; floor sweeps and brushes; scrub brushes, dusting brushes, window brushes, etc. (excluding twisted-in-wire brushes):					
39913 35	Household.....		(X)	18.8	(X)	14.1
39913 37	Industrial.....		(X)	17.1	(X)	14.1
39913 43	Industrial brushes, except maintenance, including power-driven rotary, end, cup, jewelers' and dentists' brushes, etc.....		(X)	27.3	(X)	22.3
39913 51	Twisted-in-wire brushes (all types).....		(X)	11.9	(X)	12.7
39913 98	Other brushes.....		(X)	10.6	(X)	9.8
39913 00	Other brushes, n.s.k.....		(X)	1.8	(X)	5.1
39910 00	Brooms and brushes, n.s.k. (For companies with 10 or more employees. See Note.).....		(X)	14.0	(X)	10.1
39910 02	Brooms and brushes, n.s.k. (For companies with less than 10 employees. See Note.).....		(X)	11.6		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

- Represents zero. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(Not applicable to this report)

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3991, these small establishments accounted for approximately 3 percent of payrolls and 3 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

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# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

**Textile mill products • Apparel and leather • Chemicals, rubber, and plastics • Machinery and equipment • Primary metals • Intermediate metal products • Processed foods • Lumber, furniture, and paper products • Stone, clay, and glass products.**

A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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*For information on individual product groups covered, frequency of reports, and subscription prices, write to the Bureau of the Census, Washington, D. C. 20233.*

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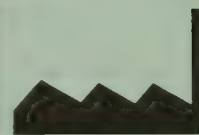
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OFFICIAL BUSINESS



# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

### Signs and advertising displays

SIC Code 3993

## preliminary report

The Signs and Advertising Displays Industry includes establishments primarily engaged in manufacturing electrical, mechanical, cutout, or plate signs and advertising displays, including neon signs and advertising novelties. Sign painting shops doing business on a custom basis are classified in industry 7399. Establishments primarily engaged in manufacturing electric signal equipment are classified in industry 3662, and lighting fixtures in industry 3642.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classi-

fied in the Signs and Advertising Displays Industry amounted to \$864.7 million, an increase of 34 percent compared with 1963. Value added by manufacture at \$540.9 million in 1967 was 33 percent more than value added in 1963. Average employment in the industry showed an increase of 9 percent from 1963 to a total of 48 thousand employees in 1967.

Of the \$864.7 million total value of shipments and other receipts of establishments classified as signs and advertising display, \$18 million were products primary to other industries; and \$92 million were receipts for miscellaneous activities. The industry shipments of primary products represented 98 percent of the total manufactured product shipments, primary and secondary. This percent, called the special-

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)
INDUSTRY 3993.—SIGNS AND ADVERTISING DISPLAYS														
1967 Census....	3,169	619	47.5	304.5	36.6	70.0	195.6	540.9	326.1	864.7	22.5	86.1	98	95
1966 ASM <sup>1</sup> .....	(NA)	(NA)	48.3	294.2	40.6	76.3	202.3	495.9	359.4	818.6	20.4	91.5	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	46.2	269.8	39.1	71.4	179.4	444.3	300.1	742.9	19.4	68.7	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	43.2	259.7	32.8	65.3	171.2	455.7	263.8	713.1	*12.7	72.5	(NA)	(NA)
1963 Census....	3,206	570	43.5	242.6	33.1	64.8	163.5	407.5	243.8	646.8	15.0	69.1	96	95
1962 ASM <sup>1</sup> .....	(NA)	(NA)	41.3	223.8	31.4	62.2	149.4	378.2	238.2	609.0	*9.4	62.4	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	39.8	204.4	30.8	60.3	137.8	336.5	222.6	557.1	*17.8	52.5	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	39.9	203.1	31.0	60.8	139.0	331.1	211.6	539.0	*11.0	54.9	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	38.7	188.3	30.3	57.9	128.5	307.2	196.0	501.4	*8.6	51.3	(NA)	(NA)
1958 Census <sup>2</sup> ...	2,725	460	36.2	173.0	27.9	53.6	118.9	281.2	179.1	457.0	13.5	48.2	95	95

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 3 and 4, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued September 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary  
Rocco C. Siciliano, Under Secretary  
BUREAU OF THE CENSUS

ization ratio for the industry, was 96 percent in 1963.

The total value of signs and advertising displays shipped by all producers in 1967 was \$793 million of which \$755 million, or 95 percent, were shipped by plants classified in industry 3993, Signs and Advertising Displays, while the remainder was shipped by plants classified in other industries.

This percent, called the coverage ratio, was also 95 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)						
INDUSTRY 3993.—SIGNS AND ADVERTISING DISPLAYS													
United States, total.....	3,169	619	47.5	304.5	36.6	70.0	195.6	540.9	326.1	864.7	22.5	43.5	407.5
New England.....	181	40	2.5	14.8	2.0	3.7	9.8	25.8	15.0	40.3	0.6	2.0	17.8
New Hampshire.....	11	1	0.1	0.4	0.1	0.1	0.3	0.4	0.4	0.8	(Z)	(D)	(D)
Massachusetts.....	94	23	1.5	9.2	1.2	2.1	5.9	16.0	8.8	24.5	0.4	1.3	11.5
Rhode Island.....	30	12	0.5	2.7	0.5	0.8	1.9	4.9	2.3	7.2	0.1	0.3	1.8
Connecticut.....	37	3	0.3	2.1	0.3	0.5	1.4	3.9	3.2	7.0	0.1	(D)	(D)
Middle Atlantic.....	777	177	12.3	76.2	9.9	19.3	50.7	135.9	80.0	215.3	7.5	11.8	106.5
New York.....	481	118	8.4	51.7	6.8	13.4	34.5	93.5	54.8	148.0	2.6	7.9	73.4
New Jersey.....	141	29	1.7	9.9	1.4	2.6	6.8	17.1	10.2	27.2	(D)	1.8	15.7
Pennsylvania.....	155	30	2.2	14.6	1.7	3.2	9.4	25.3	14.9	40.1	(D)	2.1	17.4
East North Central....	667	156	13.1	91.1	10.0	19.8	57.7	152.6	99.2	252.5	4.9	12.6	123.7
Ohio.....	164	41	3.1	20.6	2.3	4.6	13.1	35.6	23.8	59.6	0.9	3.6	29.4
Indiana.....	77	7	0.9	5.2	0.6	1.2	3.3	10.9	7.1	17.7	0.2	0.7	7.6
Illinois.....	226	73	5.6	40.5	4.3	8.8	25.0	67.5	40.1	107.6	2.5	5.3	53.9
Michigan.....	125	17	1.7	13.7	1.3	2.5	8.9	21.0	13.1	34.2	0.6	1.6	18.0
Wisconsin.....	75	18	1.8	11.0	1.4	2.6	7.3	17.6	15.0	33.4	0.7	1.4	14.8
West North Central....	249	57	4.3	23.9	3.3	5.6	14.7	45.8	29.2	74.6	1.9	3.8	32.6
Minnesota.....	58	16	0.9	6.4	0.6	1.4	3.9	9.7	8.1	17.7	0.3	1.4	10.6
Iowa.....	43	10	1.2	5.1	0.9	1.1	3.0	13.4	6.9	20.1	0.5	0.5	7.3
Missouri.....	71	22	1.6	8.6	1.2	2.2	5.6	15.9	10.1	25.9	0.5	1.3	10.2
Kansas.....	32	2	0.4	2.2	0.3	0.6	1.2	3.9	2.3	6.1	(D)	0.3	2.5
South Atlantic.....	338	52	3.6	21.0	2.9	5.5	14.4	37.5	19.3	56.4	1.5	3.2	25.6
Maryland.....	43	15	0.6	3.5	0.5	1.0	2.7	6.5	3.5	10.1	0.4	0.4	3.1
Virginia.....	29	5	0.6	3.3	0.5	0.9	2.2	4.9	3.1	8.2	0.3	0.6	4.1
West Virginia.....	15	1	0.1	0.4	0.1	0.1	0.3	0.7	0.5	1.2	(Z)	(D)	(D)
North Carolina.....	30	3	0.3	1.4	0.2	0.4	0.9	2.6	1.3	3.9	(Z)	0.3	2.4
Georgia.....	60	7	0.4	2.6	0.4	0.7	1.8	5.8	2.9	8.6	0.3	0.4	3.0
Florida.....	133	14	1.0	6.2	0.8	1.5	4.1	10.4	5.4	15.6	0.3	1.0	8.1
East South Central....	138	21	2.6	14.1	1.8	3.4	8.5	28.1	26.9	54.5	2.2	1.3	11.0
Kentucky.....	36	7	0.5	2.5	0.3	0.6	1.4	4.2	3.6	7.6	0.2	0.3	2.4
Tennessee.....	60	13	1.7	9.6	1.2	2.1	5.7	19.7	18.2	37.7	1.7	0.6	6.6
Alabama.....	29	2	0.3	1.6	0.3	0.5	1.1	3.4	4.6	8.0	0.2	0.3	1.5
West South Central....	246	27	2.3	12.6	1.7	3.3	8.4	24.3	16.9	41.3	1.0	1.9	16.2
Arkansas.....	12	2	0.2	0.9	0.1	0.2	0.5	1.6	1.2	2.9	0.1	0.2	1.5
Louisiana.....	31	3	0.2	1.3	0.2	0.3	0.9	2.4	1.3	3.7	0.1	0.2	1.4
Oklahoma.....	40	2	0.3	2.0	0.3	0.5	1.4	3.2	2.2	5.4	0.1	0.3	2.4
Texas.....	163	20	1.6	8.5	1.2	2.3	5.7	17.1	12.2	29.3	0.8	1.2	11.0
Mountain.....	140	16	1.2	8.5	0.9	1.8	5.3	15.4	6.7	22.1	0.4	1.3	13.5
Colorado.....	44	7	0.4	2.7	0.3	0.6	1.8	5.1	2.4	7.4	0.1	0.4	4.0
New Mexico.....	13	2	0.1	0.6	0.1	0.2	0.4	1.1	0.5	1.7	(D)	0.1	0.8
Arizona.....	25	3	0.2	1.3	0.2	0.3	0.9	2.2	1.3	3.6	(D)	0.2	2.1
Utah.....	19	3	0.3	2.6	0.2	0.5	1.4	4.6	1.4	6.1	(D)	0.2	2.2
Pacific.....	433	72	5.7	42.2	4.0	7.6	26.2	75.5	33.0	107.7	2.5	5.6	60.7
Washington.....	56	9	0.5	3.9	0.4	0.7	2.5	6.5	2.5	9.0	0.6	0.5	5.6
Oregon.....	38	6	0.4	3.3	0.3	0.5	1.9	5.4	3.1	8.4	0.2	0.4	3.7
California.....	330	57	4.6	34.7	3.4	6.3	21.7	63.1	27.2	89.6	1.8	4.6	50.9

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.  
(Z) Less than \$50 thousand.



TABLE 3. Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Value of shipments including interplant transfers (million dollars)	
		1967	1963
3993- --	SIGNS AND ADVERTISING DISPLAYS, TOTAL.....	793.1	583.8
39931 11	Luminous tubing, fluorescent lamp and incandescent bulb signs (electric).....	172.8	144.5
39932 --	Nonelectric signs and advertising displays, total.....	346.0	302.3
	Metal signs, by any application process, including point-of-sale signs, road signs, truck signs, highway and street markers, and all other metal signs:		
39932 11	Porcelain enameled.....	77.4	9.0
39932 19	All other metal signs.....		50.6
	Signs other than metal:		
39932 23	Screen printed.....	24.4	24.6
39932 25	Other.....	15.6	
	Window, backbar, counter and lobby cutouts and displays:		
39932 33	Screen printed.....	34.2	52.7
39932 35	Other.....	26.7	
	All other signs and advertising displays, including sign letters:		
39932 93	Screen printed.....	115.9	138.9
39932 95	Other.....	40.3	
39932 00	Nonelectric signs and advertising displays, n.s.k.....	11.5	26.5
39933 11	Advertising specialties.....	115.0	83.7
39930 00	Signs and advertising displays, n.s.k. (For companies with 10 or more employees. See Note.)....	94.2	53.3
39930 02	Signs and advertising displays, n.s.k. (For companies with less than 10 employees. See Note.)....	65.1	

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(Not applicable to this report)

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3993, these small establishments accounted for approximately 6 percent of payrolls and 8 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

### **Production and Related Worker Man-Hours--**

This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.



# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

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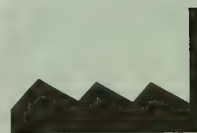
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# 1967 CENSUS OF MANUFACTURES



MC67(P)-39D-3

## INDUSTRY SERIES

**preliminary  
report**

### Morticians' goods

SIC Code 3994

The Morticians' Goods Industry includes establishments primarily engaged in manufacturing caskets, coffins, burial cases, and coffin shipping cases, whether of wood or other material except concrete (industry 3272); morticians' supplies and accessories, such as burial garments, gloves, slippers, casket linings, and embalming fluids; and morticians' paraphernalia and equipment.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Morticians' Goods Industry amounted to

\$307.0 million, an increase of 6 percent compared with 1963. Value added by manufacture at \$162.3 million in 1967 was 2 percent more than value added in 1963. Average employment in the industry showed a decrease of 6 percent from 1963 to a total of 16.2 thousand employees in 1967.

Of the \$307.0 million total value of shipments and other receipts of establishments classified as morticians' goods, \$14 million were products primary to other industries; and \$10 million were receipts for miscellaneous activities. The industry shipments of primary products represented 95 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was also 95 percent in 1963.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3994.--MORTICIANS' GOODS <sup>3</sup>														
1967 Census....	562	211	16.2	91.3	13.1	26.6	61.1	162.3	144.6	307.0	4.2	51.9	95	98
1966 ASM <sup>1</sup> .....	(NA)	(NA)	17.0	90.0	12.6	25.8	57.9	182.4	140.2	319.1	7.7	50.3	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	17.0	89.7	13.4	27.4	59.1	173.0	128.7	302.6	6.7	44.5	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	16.8	85.9	12.6	26.6	56.0	150.4	131.0	281.9	6.8	47.9	(NA)	(NA)
1963 Census....	617	224	17.3	86.2	13.5	27.5	58.4	158.4	132.7	290.0	5.5	46.4	95	98
1962 ASM <sup>1</sup> .....	(NA)	(NA)	17.0	82.1	13.6	29.3	54.8	150.9	128.4	280.3	*14.1	45.4	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	17.0	79.7	13.5	28.8	53.2	145.8	120.9	264.1	*12.5	45.9	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	17.4	78.5	13.8	29.4	53.6	145.6	118.2	260.9	*12.4	42.9	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	16.8	75.4	13.4	27.4	51.1	130.8	113.4	245.2	*10.9	39.7	(NA)	(NA)
1958 Census <sup>2</sup> ...	592	219	17.4	73.7	13.8	27.8	50.6	128.9	109.9	237.8	5.8	40.3	95	99

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 2 and 6, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

<sup>3</sup>The code for this industry was 3988 through 1966. However, no change in definition was involved in changing the code to SIC 3994 in 1967.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

**BUREAU OF THE CENSUS** George Hay Brown, Director

The total value of morticians' goods shipped by all producers in 1967 was \$289.5 million of which \$283 million, or 98 percent, were shipped by plants classified in industry 3994, Morticians' Goods, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was also 98 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967										1963		
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)	
	INDUSTRY 3994.--MORTICIANS' GOODS												
United States, total.....	562	211	16.2	91.3	13.1	26.6	61.1	162.3	144.6	307.0	4.2	17.3	158.4
Northeast.....	122	43	3.9	22.6	3.1	6.5	15.9	37.5	33.8	71.2	0.9	4.5	37.8
East North Central....	130	61	6.2	38.6	4.9	9.9	24.4	71.4	50.6	122.4	1.4	6.0	68.6
Ohio.....	37	18	1.4	8.4	1.2	2.3	5.9	15.3	8.9	24.2	0.6	1.5	15.4
Indiana.....	32	19	2.9	18.9	2.2	4.7	11.4	38.1	24.4	62.7	0.4	2.4	33.2
Illinois.....	30	15	1.3	8.5	1.1	2.1	5.3	13.3	11.9	25.3	0.4	1.6	15.0
Michigan.....	21	5	0.3	1.8	0.2	0.5	1.2	3.1	3.2	6.3	0.1	0.3	2.8
Wisconsin.....	10	4	0.2	1.1	0.2	0.3	0.6	1.7	2.1	3.8	(Z)	0.2	2.2
West North Central....	58	19	1.0	4.7	0.8	1.4	2.9	9.3	7.9	17.0	0.3	1.1	9.0
Missouri.....	30	11	0.5	2.3	0.4	0.8	1.4	4.8	4.1	8.9	0.2	0.6	4.5
South Atlantic.....	69	22	1.4	6.6	1.5	2.4	4.3	11.2	10.7	21.9	(D)	1.8	13.0
North Carolina.....	16	7	0.3	1.2	0.2	0.5	0.8	1.7	3.1	4.8	0.1	0.4	2.4
Georgia.....	15	6	0.5	2.3	0.8	0.9	1.5	3.9	3.1	6.9	0.2	0.8	5.4
Florida.....	20	3	0.2	0.9	0.1	0.3	0.6	2.1	1.3	3.4	0.1	0.2	1.7
East South Central....	52	22	1.4	6.0	1.2	2.5	4.7	9.7	15.4	25.1	0.6	1.2	8.2
Tennessee.....	25	11	0.7	3.2	0.6	1.4	2.6	5.3	8.2	13.6	0.5	0.8	5.1
Alabama.....	13	6	0.3	1.2	0.3	0.5	0.9	2.0	2.7	4.6	(Z)	0.3	2.0
West South Central....	55	20	1.1	5.3	0.9	1.9	3.4	11.0	11.6	22.6	0.1	1.2	10.0
Oklahoma.....	10	2	0.1	0.5	0.1	0.1	0.3	1.2	1.4	2.6	(Z)	0.1	0.9
Texas.....	32	12	0.6	2.8	0.5	0.9	1.8	5.8	6.7	12.6	(Z)	0.7	5.4
Mountain.....	17	2	0.2	0.9	0.1	0.3	0.6	1.5	1.7	3.2	0.1	0.2	1.4
Pacific.....	59	22	1.1	6.7	0.9	1.8	4.9	10.7	12.9	23.6	(D)	1.2	10.4
Washington.....	12	5	0.2	1.3	0.2	0.3	1.0	2.3	1.8	4.1	0.1	0.2	1.7
California.....	42	17	0.8	5.2	0.7	1.4	3.8	8.1	10.8	18.9	(D)	0.9	8.4

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.

**TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963**

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (\$1,000)	Quantity	Value (\$1,000)
3994 - --	MORTICIANS' GOODS, TOTAL.....	.....	(X)	289.5	(X)	267.4
39941 11	Metal caskets and coffins, completely lined and trimmed.....	1,000 units...	907.5	133.7	824.8	123.6
39942 --	Wood caskets and coffins, completely lined and trimmed, total.....	.....	(X)	59.8	(X)	67.3
39942 11	Cloth covered.....	1,000 units...	454.5	31.1	565.1	36.3
39942 52	Hard finished.....	.....do.....	208.3	28.7	203.7	27.2
39942 00	Wood caskets, and coffins, completely lined and trimmed, n.s.k..	.....	-	-	(X)	3.8
39943 --	Other caskets and coffins, metal vaults, and morticians' supplies, total.....	.....	(X)	68.7	(X)	64.1
39943 11	Caskets and coffins, other than metal or wood, completely lined and trimmed (glass fibrous material, plastic, masonite, etc.).....	1,000 units...	(NA)	2.3	(NA)	3.5
39943 31	Casket shells, KD and SU, caskets unlined or untrimmed: Metal.....	.....do.....	469.8	26.8	(NA)	28.0
39943 55	Wood.....	.....do.....	(NA)	8.5		
39943 21	Other caskets (plastic, glass fibrous materials, masonite, etc.).....	.....do.....	(NA)	0.3		
39943 91	Metal burial vaults (12 gauge or heavier), excluding shipping cases.....	.....do.....	113.9	10.2	108.0	9.6
39943 98	Other morticians' supplies, including burial boxes, burial vaults, except metal and concrete, embalming chemicals, burial garments, casket shipping containers and cases, innerliners sold as such, and morticians' equipment and supplies.....	.....do.....	(NA)	20.6	(NA)	22.2
39943 00	Other caskets and coffins, metal vaults, and morticians' supplies, n.s.k.....	.....	-	-	(X)	0.8
39940 00	Morticians' goods, n.s.k. (For companies with 10 or more employees. See Note.).....	.....	(X)	16.2	(X)	12.4
39940 02	Morticians' goods, n.s.k. (For companies with less than 10 employees. See Note.).....	.....	(X)	11.1		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

- Represents zero. (NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.

**TABLE 4. Materials Consumed, by Kind: 1967 and 1963**

(Not applicable to this report)



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3994, these small establishments accounted for approximately 3 percent of payrolls and 3 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.

# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





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# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

### Hard surface floor coverings

**preliminary  
report**

SIC Code 3996

The Linoleum, Asphalted-felt-base, and other Hard Surface Floor Coverings, Not Elsewhere Classified, Industry includes establishments primarily engaged in manufacturing linoleum, asphalted-felt-base, and other hard surface floor coverings, not elsewhere classified. Establishments primarily engaged in manufacturing rubber floor coverings are classified in industry 3069, and cork floor and wall tile in industry 2499.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classi-

fied in the Hard Surface Floor Coverings Industry amounted to \$220.6 million, an increase of 8 percent compared with 1963. Value added by manufacture at \$132.2 million in 1967 was 11 percent more than value added in 1963. Average employment in the industry remained approximately the same at 5.9 thousand employees.

Of the \$220.6 million total value of shipments and other receipts of establishments classified as hard surface floor coverings, \$31 million were products primary to other industries; and \$5 million were receipts for miscellaneous activities. The industry shipments of primary products represented 86 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 82 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Special-ization ratio (per-cent)	Coverage ratio (per-cent)
	Total (number)	With 20 employ-ees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3996, --HARD SURFACE FLOOR COVERINGS														
1967 Census....	19.0	11.0	5.9	42.7	4.8	9.8	32.5	132.2	88.8	220.6	7.4	39.7	86	97
1966 ASM <sup>1</sup> .....	(NA)	(NA)	6.3	44.8	5.1	10.8	34.4	135.2	100.8	230.3	9.3	39.9	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	6.2	42.3	5.0	10.4	32.4	139.2	89.2	227.8	10.0	32.4	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	6.3	42.3	5.1	10.7	32.3	132.5	86.4	217.6	6.8	31.0	(NA)	(NA)
1963 Census....	16	13	6.2	39.0	5.0	10.1	29.5	118.8	80.7	204.1	4.4	29.9	82	98
1962 ASM <sup>1</sup> .....	(NA)	(NA)	6.4	39.4	5.3	11.0	30.6	110.7	82.8	191.3	5.0	34.7	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	6.6	38.2	5.3	10.8	29.4	96.9	79.5	179.7	5.7	32.9	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	7.1	39.7	5.8	11.8	31.1	96.1	83.9	183.8	7.8	36.2	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	8.0	44.8	6.8	14.3	36.3	110.9	97.5	206.5	*9.5	43.0	(NA)	(NA)
1958 Census <sup>2</sup> ...	14	14	8.0	41.9	6.7	14.0	34.1	93.1	87.1	181.6	5.4	40.1	84	98

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

Harold C. Passer, Assistant Secretary for Economic Affairs

**BUREAU OF THE CENSUS** George Hay Brown, Director



The total value of hard surface floor coverings shipped by all producers in 1967 was \$190.5 million of which \$185 million, or 97 percent, were shipped by plants classified in industry 3996, Hard Surface Floor Coverings, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 98 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

## TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(Geographic data for this industry will not be published separately)

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	1967			1963		
			Production for all purposes	Total shipments, including interplant transfers		Production for all purposes	Total shipments, including interplant transfers	
				Quantity	Value		Quantity	Value
			(quantity)		(million dollars)	(quantity)		(million dollars)
3996- --	HARD SURFACE FLOOR COVERINGS.....		(X)	(X)	190.5	(X)	(X)	168.1
39961 --	Linoleum.....		(X)	(X)	190.5	(X)	(X)	33.7
39962 --	Asphalted-felt-base and supported plastic floor covering.....					(X)	(X)	133.6
	Linoleum:					21.3	23.3	33.7
39961 11	Sheet goods.....	Mil. sq. ft..						
39961 31	Tile.....	..do.....						
	Asphalted-felt-base and supported plastic floor coverings:		(X)	(X)	130.8			
	Floor covering:							
	Enamel coated or printed:							
39962 11	Border rugs.....	..do.....				53.0	56.7	14.9
39962 21	Sheet goods.....	..do.....				13.5	11.9	3.7
39962 31	Plastic coated or plastic printed border rugs and sheet goods, including rotogravure printed.....	..do.....	140.1	135.9	91.8	77.2	77.1	44.3
39962 41	Other asphalted-felt-base floor covering.....	..do.....	(X)	(1)	(1)	4.6	5.4	2.5
39962 51	Wall covering.....	..do.....						
	Plastic floor, wall, and counter covering: Supported, including scrap vinyl backed:					30.7	28.6	65.2
39962 61	Sheet goods.....	..do.....						
39962 65	Tile.....	..do.....	27.8	27.1	66.7	1.6	1.6	2.6
39962 00	Asphalted-felt-base and supported plastic floor covering, n.s.k.....		(X)	(X)	-	(X)	(X)	0.4
39960 00	Hard surface floor coverings, n.s.k. (For companies with 10 or more employees. See Note.).....		(X)	(X)	1.0	(X)	(X)	0.7
39960 02	Hard surface floor coverings, n.s.k. (For companies with less than 10 employees. See Note.).....		(X)	(X)	0.2			

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

- Represents zero. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>1967 data for product code 3996241, "other asphalted-felt-base floor covering" and product code 3996251, "wall covering" are included with product codes 3996111, 3996131, 3996211 and 3996221 to avoid disclosing figures of individual companies.

TABLE 4. **Materials Consumed, by Kind: 1967 and 1963**

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3996.--HARD SURFACE FLOOR COVERING					
	Materials, containers, and supplies, total.....		(X)	82.2	(X)	76.0
149901	Asbestos, crude, including fiber.....	1,000 short tons.	( <sup>1</sup> )	( <sup>1</sup> )	21.6	1.6
209010	Vegetable oils, including crude and processed.....	Million lbs.....	( <sup>1</sup> )	( <sup>1</sup> )	34.7	2.9
282137	Vinyl and vinyl copolymer resins, all forms.....	...do.....	( <sup>1</sup> )	( <sup>1</sup> )	70.5	12.1
281012	Pigment, organic and inorganic.....	...do.....	29.6	5.1	27.4	6.5
970099	All other materials, parts, containers, and supplies.....		(X)	76.7	(X)	51.9
976000	Materials, containers, supplies, n.s.k. <sup>2</sup> .....		(X)	0.4	(X)	1.1

n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Included with material code 970099, "All other materials and components, etc." to avoid disclosing figures for individual companies.<sup>2</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.



### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3996, these small establishments accounted for less than 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

**U.S. DEPARTMENT OF COMMERCE**  
**Bureau of the Census**  
Washington, D.C. 20233

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OFFICIAL BUSINESS



# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

**preliminary  
report**

### Manufactures, n.e.c

SIC Code 3999

The Manufacturing Industries, Not Elsewhere Classified, Industry includes establishments primarily engaged in manufacturing miscellaneous fabricated products, including beauty shop and barber shop equipment; hair work; tobacco pipes and cigarette holders; coin-operated amusement machines; matches; candles; lamp shades; dressed and dyed furs; umbrellas; parasols and canes; and other articles, not elsewhere classified.

The code number for this industry in the Standard Industrial Classification Manual is unchanged, but the content of the industry has been significantly changed from the classification system used in 1963. The change in composition of the industry as now constituted, compared with that under the classification system followed in the 1963 Census, is due principally to previous industries 3983, Matches; 3984, Candles; 3987, Lamp Shades; 3992, Furs, Dressed and Dyed;

TABLE 1. **General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 3999.--MANUFACTURES, N. E. C. <sup>1</sup>														
1967 Census....	2,213	587	56.7	284.9	46.7	88.4	197.5	540.2	409.8	944.9	23.6	139.5	95	90
1966 ASM <sup>2</sup> .....	(NA)	(NA)	46.9	223.6	38.2	75.0	158.7	408.8	352.8	757.0	*17.1	102.3	(NA)	(NA)
1965 ASM <sup>2</sup> .....	(NA)	(NA)	48.9	230.3	40.1	79.0	165.1	424.8	350.4	773.2	17.1	101.1	(NA)	(NA)
1964 ASM <sup>2</sup> .....	(NA)	(NA)	48.0	221.6	39.0	79.2	158.0	404.1	325.5	728.0	*10.7	97.4	(NA)	(NA)
1963 Census....	2,108	486	46.7	207.3	38.5	74.6	150.0	384.0	305.8	684.2	13.5	98.6	(NA)	(NA)
1962 ASM <sup>2</sup> .....	(NA)	(NA)	42.9	188.8	34.7	67.5	132.5	353.9	298.6	650.2	*13.5	100.1	(NA)	(NA)
1961 ASM <sup>2</sup> .....	(NA)	(NA)	42.6	177.0	34.8	69.0	126.0	307.7	265.7	578.2	*9.3	92.0	(NA)	(NA)
1960 ASM <sup>2</sup> .....	(NA)	(NA)	43.1	238.4	35.1	69.5	125.4	314.9	268.1	583.4	*11.0	97.2	(NA)	(NA)
1959 ASM <sup>2</sup> .....	(NA)	(NA)	46.4	180.7	38.1	72.9	130.2	311.1	264.5	580.7	*13.7	98.7	(NA)	(NA)
1958 Census <sup>3</sup> ...	1,898	433	44.4	177.2	36.4	69.4	127.9	311.1	256.6	557.4	10.2	100.4	(NA)	(NA)

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>This industry has been redefined significantly from the definition used in the 1966 Annual Survey of Manufactures and in prior years. This industry now includes the following SIC industries for prior years.

SIC	Title	SIC	Title
3983	Matches	3992	Furs, dressed and dyed
3984	Candles	3995	Umbrellas, parasols and canes
3987	Lamp shades	3999	Miscellaneous products, N. E. C.

The figures for 1966 and prior years have been revised accordingly.

<sup>2</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 5 and 4, respectively.

<sup>3</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**



and 3995, Umbrellas, Parasols, and Canes, being included in this industry for 1967.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Manufactures, N.E.C., Industry amounted to \$944.9 million, an increase of 38 percent compared with 1963. Value added by manufacture at \$540.2 million in 1967 was 41 percent more than value added in 1963. Average employment in the industry showed an increase of 21 percent from 1963 to a total of 56.7 thousand employees in 1967.

Of the \$944.9 million total value of shipments and other receipts of establishments classified

as manufactures, n.e.c., \$46 million were products primary to other industries; and \$66 million were receipts for miscellaneous activities. The industry shipments of primary products represented 95 percent of the total manufactured product shipments, primary and secondary.

The total value of manufactures, n.e.c., shipped by all producers in 1967 was \$923.2 million of which \$833 million, or 90 percent, were shipped by plants classified in industry 3999, Manufactures, N.E.C., while the remainder was shipped by plants classified in other industries.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

1967 CENSUS OF MANUFACTURES  
TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(See appendix, "Explanation of Terms")

Geographic area	1967											1963	
	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	All employees	Value added by manufacture
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages						
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(1,000)	(million dollars)
	INDUSTRY 3999. --MANUFACTURES, N. E. C.												
United States, total.....	2,213	587	56.7	284.9	46.7	88.4	197.5	540.2	409.8	944.9	23.6	(1)	(1)
New England.....	175	41	4.9	24.1	3.8	7.3	15.6	53.1	32.3	85.1	1.3	(1)	(1)
Massachusetts.....	65	24	2.7	14.2	2.0	3.9	8.4	28.0	16.3	44.3	0.9	(1)	(1)
Rhode Island.....	62	6	0.7	2.9	0.7	1.2	2.2	5.0	2.8	7.7	(D)	(1)	(1)
Middle Atlantic.....	973	279	24.3	125.7	20.4	39.0	90.0	234.3	178.4	408.0	6.4		
New York.....	712	191	15.5	82.5	12.9	24.8	58.7	144.0	103.1	245.9	3.3	(1)	(1)
New Jersey.....	141	43	4.1	22.9	3.4	6.5	15.7	45.8	38.2	81.5	2.0	(1)	(1)
Pennsylvania.....	120	45	4.8	20.3	4.1	7.7	15.6	44.5	37.2	80.7	1.2	(1)	(1)
East North Central....	342	95	13.2	72.0	10.7	20.6	49.2	137.9	109.9	249.3	5.9	(1)	(1)
Illinois.....	143	43	7.4	40.4	6.2	11.9	28.6	70.8	58.4	130.4	2.1	(1)	(1)
Michigan.....	68	17	2.1	12.4	1.7	3.3	8.3	21.8	15.2	36.7	0.7	(1)	(1)
Wisconsin.....	35	11	1.6	8.8	1.2	2.3	5.4	25.2	17.0	41.7	2.4	(1)	(1)
West North Central....	106	30	3.0	12.4	2.3	4.2	7.6	20.6	11.9	32.4	0.7	(1)	(1)
Minnesota.....	27	9	1.0	3.9	0.9	1.7	3.0	5.7	3.9	9.6	0.2	(1)	(1)
Missouri.....	41	11	1.4	6.6	1.0	1.8	3.5	11.5	5.7	17.3	(D)	(1)	(1)
South Atlantic.....	146	35	3.4	14.8	2.9	5.5	10.3	28.8	26.3	54.0	(D)	(1)	(1)
Virginia.....	19	4	0.3	1.9	0.3	0.5	1.2	4.4	4.4	8.5	0.2	(1)	(1)
North Carolina.....	23	8	1.1	4.6	0.9	1.9	3.4	8.6	6.8	15.2	(D)	(1)	(1)
Georgia.....	4	2	0.1	0.3	0.1	0.1	0.2	0.5	0.7	1.1	(Z)	(1)	(1)
Florida.....	61	11	0.9	3.6	0.8	1.3	2.5	6.3	6.4	12.6	0.1	(1)	(1)
East South Central....	30	12	1.4	5.6	1.1	2.1	4.0	7.0	8.3	15.2	1.4	(1)	(1)
Tennessee.....	13	4	0.4	1.5	0.4	0.7	1.2	2.7	1.7	4.4	(D)	(1)	(1)
West South Central....	86	18	1.3	5.3	1.1	2.0	3.6	9.8	7.4	17.1	(D)	(1)	(1)
Texas.....	59	14	0.9	3.2	0.7	1.3	2.1	6.0	4.4	10.2	0.3	(1)	(1)
Mountain.....	48	8	0.4	1.5	0.4	0.6	1.1	2.5	2.5	5.2	0.1	(1)	(1)
Colorado.....	20	5	0.2	0.6	0.2	0.3	0.5	1.4	0.6	1.9	(D)	(1)	(1)
Pacific.....	307	69	4.8	23.6	4.0	7.3	16.2	46.2	32.9	78.5	1.5	(1)	(1)
Oregon.....	11	5	0.2	1.1	0.2	0.3	0.7	1.5	1.9	3.4	(Z)	(1)	(1)
California.....	274	63	4.2	21.9	3.5	6.5	15.1	43.7	30.3	73.4	1.4	(1)	(1)

Note: Each producing State not shown separately in the above table was withheld either (a) to avoid disclosing figures for individual companies in this or associated industries or areas or (b) because the industry was of relatively minor economic importance in the State.

(D) Individual figures that are withheld are indicated with a (D). All such figures are included in higher-level totals.

(Z) Less than \$50 thousand.

<sup>1</sup>See footnote 1, table 1.



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Unit of measure	Total shipments including interplant transfers			
			1967		1963	
			Quantity	Value (million dollars)	Quantity	Value (million dollars)
3999- --	MANUFACTURED PRODUCTS, N.E.C., TOTAL.....		(X)	923.2	(X)	694.0
39991 --	Chemical fire extinguishing equipment and parts, total.....		(X)	94.4	(X)	52.3
	Hand portable extinguishers meeting the specifications of Underwriters' Laboratories and Factory Mutual Laboratories:					
39991 11	Soda-acid.....	1,000 units...	208.5	2.6	112.3	1.4
39991 13	Carbon-dioxide.....	..do.....	1,166.0	17.3	408.6	8.7
39991 15	Vaporizing liquid (carbon-tetrachloride base).....	..do.....	(1)	(1)	92.4	0.7
39991 17	Dry chemical fire extinguishers.....	..do.....	2,996.4	32.2	1,056.1	13.3
39991 18	Pressurized water.....	..do.....	483.0	7.2	91.8	2.7
39991 19	Other extinguishers, including foam.....	..do.....	1509.7	17.0	109.9	1.2
39991 29	All other hand portable extinguishers.....	..do.....	(NA)	0.3	274.8	2.5
	Other chemical fire extinguishing equipment and parts:					
39991 51	Two-wheeled chemical fire engines.....	..do.....	10.3	3.4	7.7	1.9
39991 61	Fixed systems, excluding water sprinkler systems.....	..do.....	(X)	9.8	(X)	6.0
39991 71	Parts and attachments for chemical fire-extinguishing equipment.....	..do.....	(X)	8.2	(X)	9.6
39991 00	Chemical fire extinguishing equipment and parts, n.s.k.....	..do.....	(X)	6.4	(X)	4.2
39992 --	Coin-operated amusement machines, total.....		(X)	47.7	(X)	30.0
39992 12	Pin ball machines, and bell type machines and consoles.....	1,000 units...	75.6	31.7	156.7	119.0
39992 98	Other amusement machines, including strength testing, skill games, and other arcade pieces.....	..do.....	(NA)	16.0	(NA)	11.0
39993 --	Matches, total.....		(X)	66.2	(X)	64.8
	Wooden stem:					
39993 12	Packed in boxes of over 100 matches.....	Billion matches	18.3	3.3	(NA)	3.8
	Packed in boxes of not over 100 matches:					
39993 31	Strike anywhere.....	..do.....	55.8	7.8	15.0	2.7
39993 35	Strike on box.....	..do.....			(NA)	5.8
39993 61	Paper stem, packed in books or otherwise.....	..do.....	(NA)	55.0	243.0	52.0
39993 00	Matches, n.s.k.....	..do.....	(X)	0.1	(X)	0.4
39994 11	Candles, including tapers.....	..do.....	(X)	55.1	(X)	43.7
39995 11	Lampshades.....	..do.....	(X)	27.4	(X)	35.9
39996 11	Furs, dressed and dyed.....	..do.....	(X)	39.8	(X)	43.6
39997 --	Umbrellas, parasols, and canes.....		(X)	40.3	(X)	34.1
39997 13	Umbrellas and parasols.....	..do.....	(X)	40.3	(X)	34.1
39997 15	Canes.....	..do.....			(X)	34.1
39999 --	Other miscellaneous fabricated products, total.....		(X)	391.8	(X)	327.6
39999 06	Barber and beauty chairs.....	1,000 units...	(NA)	16.1	(X)	42.3
39999 07	Hair clippers, for human use, hand and electric.....	..do.....	(X)	9.7		
39999 09	Other barber and beauty shop furniture and equipment.....	..do.....	(X)	16.4		
39999 13	Beauty and barber shop accessories, including hair curlers, pads, and wraps.....	..do.....	(X)	14.4	(X)	8.6
39999 21	Hair work, switches, toupees, wigs.....	1,000 units...	(NA)	32.0	(NA)	19.6
39999 42	Tobacco pipes.....	..do.....	9,872.1	14.6	9,647.0	13.6
39999 43	Cigar and cigarette holders.....	..do.....	(NA)	0.7	(NA)	1.6
39999 44	Cigar and cigarette lighters (except precious metal and electric).....	..do.....	(NA)	37.2	26.5	28.7
39999 51	Christmas tree ornaments and decorations (except glass and electrical).....	..do.....	(NA)	21.3	(X)	16.0
39999 98	Miscellaneous fabricated products, n.e.c.....	..do.....	(X)	216.5	(X)	181.6
39999 00	Other miscellaneous products, n.s.k.....	..do.....	(X)	12.9	(X)	15.8
39990 00	Miscellaneous products, n.e.c., n.s.k. (For companies with 10 or more employees. See Note.).....	..do.....	(X)	120.1	(X)	62.0
39990 02	Miscellaneous products, n.e.c., n.s.k. (For companies with less than 10 employees. See Note.).....	..do.....	(X)	40.4		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

(NA) Not available. n.e.c. Not elsewhere classified. n.s.k. Not specified by kind. Revised. (X) Not applicable.

\*Data for 1967 for product code 3999115, "vaporizing liquid (carbon-tetrachloride base)," has been combined with product code 3999119, "Other extinguishers, including foam."

## 1967 CENSUS OF MANUFACTURES

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 3999.--MANUFACTURES, N. E. C.					
	Materials, parts, containers, and supplies, total.....		(X)	359.8	(X)	<sup>1</sup> 274.1
	Mill shapes and forms:					
331001	Carbon steel.....	1,000 short tons.	29.2	7.0	19.5	4.7
331020	Alloy steel.....	..do.....	7.4	3.7	4.7	2.0
331031	Stainless steel.....	..do.....	7.3	6.5	4.1	3.9
335208	Aluminum and aluminum-base alloy.....	Million lbs.....	5.9	3.7	3.6	2.2
335121	Copper and copper-base alloy.....	..do.....	11.1	8.5	3.9	3.0
336200	Copper and copper-base alloy castings (rough and semifinished) <sup>2</sup> .	..do.....	3.7	3.5	4.0	2.2
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	165.3	(X)	115.3
976000	Materials, parts, containers, and supplies, n. s. k. <sup>3</sup> .....		(X)	161.6	(X)	<sup>1</sup> 140.8

(X) Not applicable. n. s. k. Not specified by kind.

<sup>1</sup>Includes \$87.4 million cost of materials for establishments previously classified in industries relating to matches, candles, lampshades, furs (dressed and dyed), and umbrellas, parasols and canes. These were separate industries for 1963 for which no deducted materials data were available.<sup>2</sup>No data are available on the quantities of copper and copper-base alloy castings produced and consumed in the same establishment.<sup>3</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 3999, these small establishments accounted for approximately 4 percent of payrolls and 5 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.





# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

**U.S. DEPARTMENT OF COMMERCE**  
**Bureau of the Census**  
Washington, D.C. 20233

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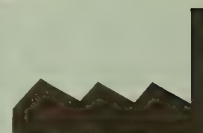








# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

## preliminary report

### Complete guided missiles

SIC Code 1925

The Guided Missiles and Space Vehicles, Completely Assembled, Industry includes establishments primarily engaged in manufacturing completely assembled guided missiles and space vehicles. Establishments primarily engaged in manufacturing guided missile and space vehicle engines and engine parts are classified in industry 3722; space satellite, and guided missile and space vehicle airborne and ground guidance, check-out and launch electronic systems and components in industry 3662; and guided missile and space vehicle airframes, nose cones, and space capsules in industry 3729.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Complete Guided Missiles Industry amounted to \$4,978.9 million, an increase of 59 percent compared with 1963. Value added by manufacture at \$3,418.2 million in 1967 was 74 percent more than value added in 1963. Average employment in the industry showed an increase of 36 percent from 1963 to a total of 206.8 thousand employees in 1967.

Of the \$4,978.9 million total value of shipments and other receipts of establishments classified as complete guided missiles, \$452.8 million were products primary to other industries; and \$426.8 million were receipts for miscellaneous activities. The industry shipments of primary products

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture <sup>3</sup>	Cost of materials	Value of work done <sup>3</sup>	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)
INDUSTRY 1925.--COMPLETE GUIDED MISSILES <sup>4</sup>														
1967 Census....	68	62	206.8	2,158.7	74.3	152.0	633.2	3,418.2	1,150.7	4,978.9	117.6	499.9	90	88
1966 ASM <sup>1</sup> .....	(NA)	(NA)	169.4	1,703.8	63.6	129.4	514.4	2,711.1	1,282.4	4,013.6	99.9	394.1	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	145.4	1,476.8	54.0	111.8	423.0	2,173.9	1,038.8	3,314.7	44.6	257.7	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	157.0	1,425.6	51.2	103.1	382.2	2,204.8	977.0	3,183.7	69.4	192.9	(NA)	(NA)
1963 Census....	32	30	151.6	1,351.2	56.9	115.6	418.4	1,960.9	1,168.6	31,29.5	48.8	160.4	94	70
1962 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1958 Census <sup>2</sup> ...	26	26	108.4	788.4	60.9	129.2	370.7	1,153.0	1,053.7	2,206.7	46.1	368.7	73	83

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

<sup>3</sup>Establishments in this industry reported value of work done rather than value of shipments. Consequently the formula for computing value added by manufacture was not adjusted for inventory change between the beginning and end of the year. It does include value added by resale.

<sup>4</sup>Includes data only for privately owned and/or operated establishments. Government owned and operated establishments are excluded.

Issued January 1970

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

Harold C. Passer, Assistant Secretary for Economic Affairs

BUREAU OF THE CENSUS George Hay Brown, Director



represented 90 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 94 percent in 1963.

The total value of complete guided missiles shipped by all producers in 1967 was \$4,634.2 million of which \$4,099.3 million, or 88 percent were shipped by plants classified in industry 1925, Complete Guided Missiles, while the remainder was shipped by plants classified in other

industries. This percent, called the coverage ratio, was 70 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(Geographic data for this industry will not be published separately)

TABLE 3. Value of Shipments by All Producers: 1967 and 1963

(Includes value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Value of work done (million dollars)	
		1967	1963
1925- --	GUIDED MISSILES AND SPACE VEHICLES, COMPLETELY ASSEMBLED, TOTAL <sup>1</sup> .....	4,634.2	<sup>r</sup> 4,032.8
19251 11	Complete missiles, excluding propulsion.....	877.0	1,241.8
19252 --	Space vehicle systems (excluding propulsion).....	1,409.9	<sup>r</sup> 478.0
	Complete space vehicles for U.S. Government military customers:		
19252 21	Unmanned.....	671.1	} 52.8
19252 23	Manned.....	50.5	
19252 27	Booster stages, excluding engines.....	7.7	
	Complete space vehicles for U.S. Government nonmilitary customers:		
19252 31	Unmanned.....	61.2	} <sup>r</sup> 425.2
19252 33	Manned.....	308.6	
19252 37	Booster stages, excluding engines.....	310.8	
19253 11	Research and development on complete missiles.....	867.6	778.1
19254 --	Research and development on complete space vehicles.....	742.8	850.1
19254 13	For U.S. Government military customers.....	120.1	205.1
19254 15	For U.S. Government nonmilitary customers.....	622.7	645.0
19255	All other services on complete missiles and space vehicles.....	734.7	684.7
19255 11	All other services on complete missiles.....	505.5	593.9
	All other services on complete space vehicles:		
19255 13	For U.S. Government military customers.....	48.5	39.9
19255 15	For U.S. Government nonmilitary customers.....	155.6	50.1
19255 23	For nongovernment customers.....	25.1	0.8
19250 00	Guided missiles and space vehicles, completely assembled, n.s.k.....	2.2	-

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

- Represents zero. n.s.k. Not specified by kind. <sup>r</sup> Revised.

<sup>1</sup>Data for this industry represents receipts, billings, or value of work done.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963			
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)		
	INDUSTRY 1925.--COMPLETE GUIDED MISSILES							
	Materials, parts, containers, and supplies, total.....		(X)	1,000.7	(X)	985.5		
	Mill shapes and forms (except castings):							
	Carbon steel:							
331011	Bars and bar shapes.....	1,000 short tons.	(NA)	3.1	2.2	0.7		
331013	Plates.....	do.....					2.1	0.5
331015	Structural shapes.....	do.....					1.2	0.3
331012	Sheet and strip.....	do.....					2.8	0.8
331017	Wire and wire products.....	do.....						
331019	All other carbon steel mill shapes and forms.....	do.....						
	Alloy steel:							
331021	Bars and bar shapes.....	do.....	4.3	4.4	0.2	0.1		
331029	All other alloy steel mill shapes and forms.....	do.....					0.1	0.2
331031	Stainless steel.....	do.....	2.0	3.5	0.5	1.3		
	Copper and copper-base alloy:							
335728	Bare wire for electrical conduction.....	Million lbs.....	0.1	0.3	1.4	3.9		
335790	Insulated wire and cable.....	Million lbs. (copper content)	1.1	2.5				
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	(NA)	0.2	(Z)	(Z)		
335123	Plate, sheet, and strip, including military cups and discs..	do.....			(D)	(D)		
335127	Pipe and tube.....	do.....			(D)	(D)		
	Aluminum and aluminum-base alloy:							
335202	Sheet, plate, and foil.....	do.....	11.7	11.1	5.9	5.1		
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	do.....	9.9	8.5	6.2	6.8		
335209	All other aluminum mill shapes and forms (wire, rolled, rod, bar, powder, welded tubing, etc.).....	do.....	4.2	2.0				
	Castings (rough and semifinished): <sup>1</sup>							
332300	Steel.....	1,000 short tons.	0.7	0.5	0.1	0.2		
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	1.5	3.4	2.1	2.6		
336200	Copper and copper-base alloy.....	.....	(D)	(D)	(D)	(D)		
	Forgings: <sup>1</sup>							
339100	Iron and steel.....	1,000 short tons.	0.2	0.7	0.3	0.9		
339200	Aluminum and aluminum-base alloy.....	Million lbs.....	1.2	1.4	2.0	2.9		
	Electric motors and generators: <sup>1</sup>							
	Fractional horsepower electric motors (under 1 hp.):							
362110	Timing motors, synchronous and subsynchronous.....	1,000.....	(D)	(D)	1	0.2		
362115	Other fractional horsepower motors.....	.....	(D)	(D)	(D)	(D)		
362120	Integral hp. motors and generators.....	.....	(D)	(D)	(D)	(D)		
	Bearings:							
356218	Ball.....	.....	(X)	0.3	(X)	1.0		
356228	Roller.....	.....	-	-				
970099	All other materials and components, parts, containers, and supplies consumed.....	.....	(X)	806.3	(X)	955.0		
976000	Materials, parts and supplies, n.s.k.....	.....	(X)	152.5	(X)	3.0		

- Represents zero. (D) Included with material code 970099 "all other materials etc." to avoid disclosing operation of individual companies.

(NA) Not available. n.s.k. Not specified by kind. Revised. (X) Not applicable. (Z) Less than 0.1 when rounded.

<sup>1</sup>No data are available for the quantities of castings, forgings, or electric motors and generators produced and consumed in the same establishment.



## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 1925, there were no such small establishments

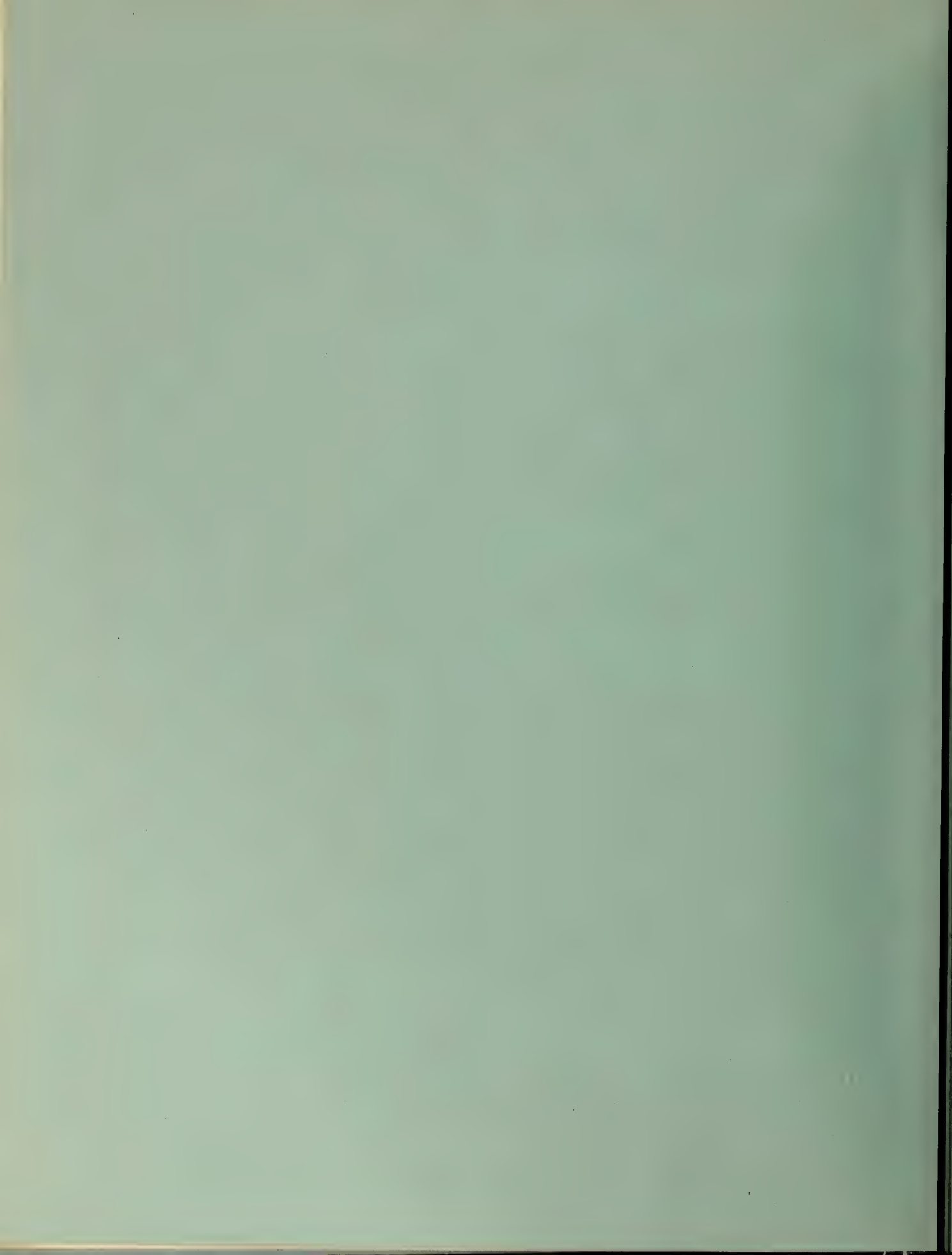
As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

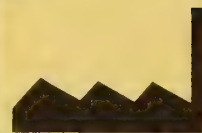
**U.S. DEPARTMENT OF COMMERCE**  
**Bureau of the Census**  
Washington, D.C. 20233

POSTAGE AND FEES PAID  
U.S. DEPARTMENT OF COMMERCE

OFFICIAL BUSINESS



# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

### Ammunition, except for small arms, n.e.c.

SIC Code 1929

**preliminary  
report**

The Ammunition, Except for Small Arms, Not Elsewhere Classified, Industry includes establishments primarily engaged in manufacturing ammunition, not elsewhere classified, or in loading and assembling ammunition over 30 mm. (or over 1.18 inch) for naval, aircraft, antiaircraft, tank, coast, and field artillery; including component parts. This industry also includes establishments primarily engaged in manufacturing bombs, mines, torpedoes, grenades, depth charges, chemical warfare projectiles, and their component parts. Establishments primarily engaged in manufacturing small arms ammunition are classified in industry 1961; explosives in industry 2892; and military pyrotechnics in industry 2899.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Ammunition, Except for Small Arms, N.E.C., Industry amounted to \$2,544.7 million, an increase of 406 percent compared with 1963. Value added by manufacture at \$1,156.8 million in 1967 was 305 percent more than value added in 1963. Average employment in the industry showed an increase of 220 percent from 1963 to a total of 104.3 thousand employees in 1967.

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
INDUSTRY 1929.--AMMUNITION, EXCEPT FOR SMALL ARMS, N.E.C.														
1967 Census....	98	84	104.3	739.9	79.2	162.4	494.1	1,156.8	1,473.0	2,544.7	50.4	233.8	91	90
1966 ASM <sup>1</sup> .....	(NA)	(NA)	48.3	312.7	38.3	76.4	217.4	476.0	580.6	1,023.4	15.4	163.3	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	29.4	187.3	21.9	44.1	122.8	242.3	260.2	500.4	8.2	91.1	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	26.2	170.8	18.9	37.7	108.0	243.8	151.6	397.1	9.7	93.5	(NA)	(NA)
1963 Census....	44	34	32.6	202.2	25.1	49.0	137.7	285.8	210.2	503.0	7.6	44.4	70	82
1962 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1958 Census <sup>2</sup> ...	50	37	11.3	59.1	7.2	14.2	34.3	87.0	52.4	138.4	6.2	(NA)	(NA)	(NA)

Note: Includes data only for privately owned and/or operated establishments. Government owned and operated establishments are excluded.

(NA) Not available. n.e.c. Not elsewhere classified. <sup>†</sup> Revised.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued December 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**

Of the \$2,544.7 million total value of shipments and other receipts of establishments classified as ammunition, except for small arms, n.e.c., \$208.4 million were products primary to other industries; and \$145.3 million were receipts for miscellaneous activities. The industry shipments of primary products represented 91 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 70 percent in 1963.

The total value of ammunition, except for small arms, n.e.c., shipped by all producers in 1967 was \$2,434.2 million of which \$2,191.0 million,

or 90 percent, were shipped by plants classified in industry 1929, Ammunition, Except for Small Arms, N.E.C., while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 82 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.



TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(Geographic data for this industry will not be published separately)

TABLE 3. Value of Receipts by all Producers: 1967 and 1963

(Includes value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers (million dollars)	
		1967	1963
1929- --	AMMUNITION, EXCEPT FOR SMALL ARMS, N.E.C., TOTAL.....	2,434.2	355.9
19291 --	Artillery ammunition, over 30 mm (or over 1.18 inches).....	<sup>1</sup> 1,153.9	169.2
19292 11	Receipts for ammunition loading and assembly, over 30 mm (or over 1.18 inches).....	<sup>1</sup> 284.4	
19293 --	Ammunition, n.e.c.....	<sup>2</sup> 986.9	186.7
19290 00	Ammunition, n.e.c., n.s.k. (Represents primarily establishments with 10 or more employees in 1967. See Note.).....	<sup>2</sup> 8.8	
19290 02	Ammunition, n.e.c., n.s.k. (Represents primarily establishments with less than 10 employees in 1967. See Note.).....	0.2	
			(X)

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.e.c. Not elsewhere classified. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>The 1966 Annual Survey of Manufactures value of shipments for product class 19291 "Ammunition" over 30 mm and 19292 "Receipts and ammunition loading and assembly over 30 mm are revised to \$558.0 million.

<sup>2</sup>The 1966 Annual Survey of Manufactures value of shipments for product class 19293 "Ammunition, n.e.c." and 19290 "Ammunition, n.e.c., n.s.k." are revised to \$282.5 million.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity (million units)	Delivered cost (million dollars)	Quantity (million units)	Delivered cost (million dollars)
	INDUSTRY 1929.--AMMUNITION, EXCEPT FOR SMALL ARMS, N.E.C.					
	Materials, parts, containers, and supplies, total.....		(X)	1,284.1	(X)	180.3
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	429.9	62.1	44.5	6.4
331012	Sheet and strip.....	..do.	81.2	17.0	33.1	5.5
331013	Plates.....	..do.				
331015	Structural shapes.....	..do.				
331017	Wire and wire products.....	..do.	207.0	40.3	38.2	6.3
331019	All other carbon steel mill shapes and forms.....	..do.				
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	..do.				
331029	All other alloy steel mill shapes and forms.....	..do.	34.3	27.1	14.3	12.4
331031	Stainless steel.....	..do.				
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction).....	Million pounds...	( <sup>1</sup> )	( <sup>1</sup> )		
335790	Insulated wire and cable.....	Million pounds (copper content)	( <sup>1</sup> )	( <sup>1</sup> )	0.1	0.1
335102	Rod, bar, and mechanical wire including extruded and/or drawn shapes.....	Million pounds...	5.4	2.3	1.1	0.7
335123	Plate, sheet, and strip, including military cups and discs.....	..do.	1.5	0.8	5.6	2.5
335127	Pipe and tube.....	..do.	173.2	73.8		
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	..do.	11.9	6.5	3.3	1.7
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.	..do.			10.8	5.4
335209	All other aluminum mill shapes and forms (wire, rolled rod, bar, powder, welded tubing, etc.).....	..do.	32.8	17.4	32.2	19.8
333401	Aluminum and aluminum-base alloy refinery shapes.....	1,000 short tons.	-	-	( <sup>1</sup> )	( <sup>1</sup> )
999811	Iron and steel scrap (excluding home scrap).....	..do.	-	-	( <sup>1</sup> )	( <sup>1</sup> )
999808	Aluminum and aluminum-base alloy scrap (excluding home scrap).....	..do.	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
	Castings (rough and semifinished): <sup>2</sup>					
332011	Iron (gray and malleable).....	..do.	41.9	9.8	4.6	1.0
332300	Steel.....	..do.	3.5	1.6	1.2	0.7
336100	Aluminum and aluminum-base alloy.....	Million pounds...	7.9	8.0	0.5	0.5
336200	Copper and copper-base alloy.....	..do.	0.1	0.1	( <sup>1</sup> )	( <sup>1</sup> )
	Forgings: <sup>2</sup>					
339100	Iron and steel forgings.....	1,000 short tons.	78.4	33.2	1.2	0.6
339200	Aluminum and aluminum-base alloy forgings.....	Million pounds...	4.1	5.9	( <sup>1</sup> )	( <sup>1</sup> )
	Fractional horsepower electric motors (under 1 hp.): <sup>2</sup>					
362110	Timing motors, synchronous and subsynchronous.....	1,000.....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
362115	Other fractional horsepower electric motors and generators, ex- cluding timing motors.....	..do.	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
	Bearings:					
356218	Ball.....	..do.				
356228	Roller.....	..do.	(X)	( <sup>1</sup> )	(X)	0.1
970099	All other materials and components, parts, containers, and supplies consumed.....	..do.	(X)	<sup>1</sup> 928.7	(X)	<sup>1</sup> 112.0
976000	Materials, parts, containers and supplies, n.s.k. <sup>3</sup> .....	..do.	(X)	49.5	(X)	4.6

-Represents zero. n.e.c. Not elsewhere classified. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Included with material code 970099, "All other materials and components, parts, containers, and supplies consumed" to avoid disclosing the operations of individual companies.<sup>2</sup>No data are available on the quantities of castings, forgings or fractional horsepower electric motors and generators produced and consumed in the same establishment.<sup>3</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

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In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 1929, these small establishments accounted for approximately 0.1 percent of payrolls and 0.1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

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# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees**--All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "allemployee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls**--This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours**--This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials**--The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed**--In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments**--The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.

**U.S. DEPARTMENT OF COMMERCE**  
**Bureau of the Census**  
Washington, D.C. 20233

POSTAGE AND FEES PAID  
U.S. DEPARTMENT OF COMMERCE

OFFICIAL BUSINESS





# 1967 CENSUS OF MANUFACTURES



MC67(P)-19A-3

## INDUSTRY SERIES

**preliminary  
report**

### Tanks and Tank Components

SIC Code 1931

The Tanks and Tank Components Industry includes establishments primarily engaged in manufacturing or assembling complete tanks, and specialized components for tanks. Establishments primarily engaged in manufacturing military vehicles other than tanks are classified in Group 371, and tank engines in industry 3519.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Tanks and Tank Components Industry amounted to \$392.5 million, practically equal to

1963. Value added by manufacture at \$144.5 million in 1967 was 3 percent less than value added in 1963. Average employment in the industry showed an increase of 16 percent from 1963 to a total of 13.1 thousand employees in 1967.

Of the \$392.5 million total value of shipments and other receipts of establishments classified as Tanks and Tank Components, \$40.1 million were products primary to other industries; and \$28.0 million were receipts for miscellaneous activities. The industry shipments of primary products represented 89 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 95 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)							
INDUSTRY 1931.--TANKS AND TANK COMPONENTS														
1967 Census....	27	21	13.1	97.8	10.0	20.6	64.5	144.5	261.8	392.5	3.5	88.0	89	78
1966 ASM <sup>1</sup> .....	(NA)	(NA)	10.1	82.8	7.1	15.6	50.4	133.3	155.8	274.1	5.7	74.7	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	7.6	56.3	5.0	10.8	33.6	106.1	116.3	220.0	1.8	60.8	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	9.1	62.9	6.0	11.6	37.1	78.1	212.5	296.6	1.4	72.7	(NA)	(NA)
1963 Census.....	26	19	11.3	76.6	7.8	16.2	48.4	148.4	258.9	394.1	5.2	82.0	95	79
1962 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1958 Census <sup>2</sup> ...	17	10	7.1	39.9	4.6	9.7	25.2	63.7	143.9	212.4	1.5	29.4	89	84

Note: Includes data only for privately-owned and/or operated establishments. Government-owned and operated establishments are excluded.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

BUREAU OF THE CENSUS George Hay Brown, Director

The total value of Tanks and Tank Components shipped by all producers in 1967 was \$415.7 million of which \$324.4 million, or 78 percent, were shipped by plants classified in industry 1931, Tanks and Tank Components, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 79 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

## TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(Geographic data for this industry will not be published separately.)

TABLE 3. Value of Shipments by All Producers: 1967 and 1963

(Includes value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Value (million dollars)	
		1967	1963
1931- --	TANKS AND TANK COMPONENTS.....	415.7	454.4

Note: Includes data only for privately-owned and/or operated establishments. Government-owned and operated establishments are excluded.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

(see appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 1931.--TANKS AND TANK COMPONENTS					
	Materials, parts, containers, and supplies, total.....		(X)	227.5	(X)	255.9
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 tons.....	63.1	42.5	7.7	3.8
331012	Sheet and strip.....	..do.....				
331013	Plates.....	..do.....				
331017	Wire and wire products.....	..do.....				
331019	All other carbon steel mill shapes and forms.....	..do.....				
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	..do.....	63.1	42.5	33.5	20.9
331029	All other alloy steel mill shapes and forms.....	..do.....				
331031	Stainless steel.....	..do.....				
	Copper and copper-base alloy:					
335790	Insulated wire and cable.....		(D)	(D)	(D)	(D)
335102	Rod, bar, and mechanical wire including extruded and/or drawn shapes.....	Million lbs.....	0.2	0.2	(D)	(D)
335127	Pipe and tube.....	..do.....			(D)	(D)
	Aluminum and aluminum-base alloy:					
335202	Sheet plate and foil.....	..do.....	17.1	13.3	(D)	(D)
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	..do.....			(D)	(D)
335209	All other aluminum mill shapes and forms (wire, rolled rod, bar, powder, welded tubing, etc.).....	..do.....			(D)	(D)
	Castings (rough and semifinished): <sup>1</sup>					
332011	Iron (gray and malleable).....		(D)	(D)	(D)	(D)
332300	Steel.....	1,000 tons.....	(D)	(D)	31.8	29.5
336100	Aluminum and aluminum-base alloy.....		(D)	(D)	(D)	(D)
	Forgings:					
339100	Iron and steel.....	1,000 tons.....	(D)	(D)	9.3	5.1
339200	Aluminum and aluminum-base alloy.....		(D)	(D)	(D)	(D)
	Fractional horsepower electric motors and generators (under 1 hp.):					
362115	Other fractional horsepower electric motors and generators, excluding timing motors.....		(D)	(D)	(D)	(D)
	Bearings:					
356218	Ball.....		(D)	(D)	(X)	1.3
356228	Roller.....		(D)	(D)		
970099	All other materials and components, parts, containers, and supplies consumed.....		(X)	115.1	(X)	181.3
976000	Materials, parts, containers and supplies, n.s.k. <sup>2</sup> .....		(X)	56.4	(X)	13.6

(D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or from related figures. n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Includes all materials for which a symbol (D) appears.

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# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

**Textile mill products • Apparel and leather • Chemicals, rubber, and plastics • Machinery and equipment • Primary metals • Intermediate metal products • Processed foods • Lumber, furniture, and paper products • Stone, clay, and glass products.**

A continuing series of more than 100 monthly, quarterly, and annual reports on industrial production, inventories, and orders. Issued by the Bureau of the Census, this series presents data for 5,000 products representing 40 percent of all manufacturing in the United States.

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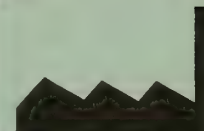
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# 1967 CENSUS OF MANUFACTURES



MC67(P)-19A-4

## INDUSTRY SERIES

### Sighting and fire control

SIC Code 1941

**preliminary  
report**

The Sighting and Fire Control Industry includes establishments primarily engaged in manufacturing sighting and fire control equipment, but which are not engaged in manufacturing optical lenses and prisms. Important products of this industry include bomb sights, percentage correctors, wind correctors, directors, and sound locators. Establishments engaged in manufacturing optical lenses and prisms, and also manufacturing sighting and fire control equipment, are classified in industry 3831, and computers and computer systems in industry 3573.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Sighting and Fire Control Equipment Industry amounted to \$100.5 million, a decrease of 36 percent compared with 1963. Value added by manufacture at \$59.7 million in 1967 was 38 percent less than value added in 1963. Average employment in the industry showed a decrease of 50 percent from 1963 to a total of 4.6 thousand employees in 1967.

Of the \$100.5 million total value of shipments and other receipts of establishments classified as sighting and fire control equipment, \$45.5 million were products primary to other industries; and \$5.6 million were receipts for miscellaneous activities. The industry shipments of primary products represented 53 percent of the total

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)							
INDUSTRY 1941.--SIGHTING AND FIRE CONTROL EQUIPMENT														
1967 Census....	13	8	4.6	40.5	2.4	5.2	18.1	59.7	38.7	100.5	1.2	11.2	53	47
1966 ASM <sup>1</sup> .....	(NA)	(NA)	3.3	27.8	1.9	4.1	13.5	42.3	25.9	65.5	1.0	9.4	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	3.8	29.4	2.8	5.8	20.8	57.2	42.5	93.6	*0.5	14.1	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	3.7	26.3	2.2	4.6	14.1	39.1	19.9	57.8	2.9	11.1	(NA)	(NA)
1963 Census.....	13	8	9.2	66.9	5.8	11.1	36.6	96.3	60.3	156.6	3.6	33.6	57	80
1962 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1958 Census <sup>2</sup> ...	20	15	36.4	237.2	19.9	40.5	112.5	360.4	325.0	682.6	4.1	(NA)	62	89

Note: Includes data only for privately-owned and/or operated establishments. Government-owned and operated establishments are excluded.

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 6 and 14, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary****Rocco C. Siciliano, Under Secretary****BUREAU OF THE CENSUS George Hay Brown, Director**



manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 57 percent in 1963.

The total value of sighting and fire control equipment shipped by all producers in 1967 was \$106.2 million of which \$50.4 million, or 47 percent, were shipped by plants classified in industry 1941, Sighting and Fire Control Equipment, while the remainder was shipped by plants

classified in other industries. This percent, called the coverage ratio, was 80 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

#### COMPARABILITY OF THE CENSUS OF MANUFACTURES AND CURRENT INDUSTRIAL REPORTS DATA

For industry 1941, the Census Bureau collects current statistics on selected products. These data appear in the Current Industrial Reports series:

MA-38B, Selected Instruments and Related Products.

### TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(Geographic data for this industry will not be published separately)

TABLE 3. Value of Shipments by All Producers: 1967 and 1963

(Includes value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total value of shipments including interplant transfers (million dollars)	
		1967	1963
1941- --	SIGHTING AND FIRE CONTROL EQUIPMENT.....	106.2	107.0
19410 62	As reported in the census of manufactures.....	106.2	107.0
	As reported on Census annual Form MA-38B.....	106.8	104.3

<sup>r</sup> Revised.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(Not applicable to this report)

### SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 1941, these small establishments accounted for less than 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products--**In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture--**This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment--**For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns; new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories--**Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# CURRENT INDUSTRIAL REPORTS

*Current Industrial Reports present data for industries in the following broad categories:*

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# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

**preliminary  
report**

### Small Arms

SIC Code 1951

The Small Arms Industry includes establishments primarily engaged in manufacturing small firearms having a bore 30 mm. (or 1.18 inch) and below, and parts for small firearms. Also included in this industry are establishments primarily engaged in manufacturing certain weapons over 30 mm. which are carried and employed by the individual, such as grenade launchers and heavy field machine guns. Establishments primarily engaged in manufacturing artillery and mortars having a bore over 30 mm. (or over 1.18 inch), and component parts, are classified in industry 1911.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Small Arms, 30 mm. and Under, Industry amounted to \$363.3 million, an increase of 173 percent compared with 1963. Value added by manufacture at \$215.7 million in 1967 was 144 percent more than value added in 1963. Average employment in the industry showed an increase of 75 percent from 1963 to a total of 17.5 thousand employees in 1967.

Of the \$363.3 million total value of shipments and other receipts of establishments classified as small arms, 30 mm. and under, \$13.7 million were products primary to other industries; and \$17.9 million were receipts for miscellaneous activities. The industry shipments of primary products represented 96 percent of the total

**TABLE 1. General Statistics: 1958 to 1967**

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)							
INDUSTRY 1951.--SMALL ARMS														
1967 Census....	71	32	17.5	124.6	13.2	27.5	83.7	215.7	154.5	363.3	11.0	83.4	96	96
1966 ASM <sup>1</sup> .....	(NA)	(NA)	15.4	105.5	11.4	24.2	69.4	197.1	97.1	274.0	10.0	80.8	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	10.5	66.8	8.0	16.4	47.0	118.4	56.7	166.2	6.0	46.6	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	*10.5	*62.8	*7.8	*16.2	*46.1	*123.7	*37.7	*155.1	*4.5	*44.9	(NA)	(NA)
1963 Census....	52	23	10.0	57.3	7.5	15.1	39.3	88.3	43.0	133.0	5.1	36.0	95	82
1962 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1958 Census <sup>2</sup> ...	34	23	8.0	39.2	5.8	11.6	27.2	51.0	20.4	79.1	2.1	35.7	91	81

Note: Includes data only for privately owned and/or operated establishments. Government owned and operated establishments are excluded.

\*These figures either have associated standard errors exceeding 15 percent or are not consistent with other Census series and related data. Thus, these estimates may be of limited reliability.  
(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 3 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

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**U.S. DEPARTMENT OF COMMERCE** Maurice H. Stans, Secretary

Rocco C. Siciliano, Under Secretary

**BUREAU OF THE CENSUS** George Hay Brown, Director

manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 95 percent in 1963.

The total value of small arms, shipped by all producers in 1967 was \$349.7 million of which \$331.7 million, or 96 percent, were shipped by plants classified in industry 1951, Small Arms, while the remainder was shipped by plants

classified in other industries. This percent, called the coverage ratio, was 82 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

## TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(Geographic data for this industry will not be published separately)



TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (1,000 units)	Value (million dollars)	Quantity (1,000 units)	Value (million dollars)
1951- --	SMALL ARMS, TOTAL <sup>1</sup> .....	(X)	349.7	(X)	148.5
19512 32	Pistols and revolvers.....	1,053.3	45.8	496.1	19.7
19512 52	Rifles: Center fire, repeating.....	815.6	56.9	324.4	18.2
19512 54	Rim fire: Repeating.....	764.3	22.1	371.1	9.6
19512 56	Single shot.....	131.8	2.1	179.9	2.4
19512 62	Shot guns: Single barrel: Repeating.....	617.0	38.3	321.9	17.9
19512 63	Single shot.....	284.2	8.3	281.2	7.5
19512 64	Double barrel, including over and under type.....				
19511 13	Other small firearms, 30 mm. and under, including machine guns: Shipped under U.S. military contract.....				
19512 72					
19511 53	Shipments under other than U.S. military contracts.....	(X)	172.4	(X)	68.8
19512 75					
19512 81	Parts and attachments for small firearms.....	(X)	2.9		
19510 00	Small arms, 30 mm. and under, n.s.k. (Represents establishments with 10 employees or more in 1967. See Note.).....	(X)	0.8	(X)	4.5
19510 02	Small arms, 30 mm. and under, n.s.k. (Represents establishments with fewer than 10 employees in 1967. See Note.).....	(X)	0.8		

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

n.s.k. Not specified by kind. (X) Not applicable.

<sup>1</sup>Includes data only for privately owned and/or operated establishments. Government owned and operated establishments are excluded.

## 1967 CENSUS OF MANUFACTURES

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 1951.--SMALL ARMS					
	Materials, parts, containers and supplies, total.....		(X)	147.3	(X)	39.7
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons..	11.2	2.9	8.4	1.9
331012	Sheet and strip.....	do.....	3.6	1.0	4.9	1.8
331013	Plates.....	do.....				
331017	Wire and wire products.....	do.....	0.8	0.9	0.4	0.4
331019	All other carbon steel mill shapes and forms.....	do.....				
	Alloy steel (except stainless):					
331021	Bar and bar shapes.....	do.....	4.2	2.2		
331029	All other alloy steel mill shapes and forms.....	do.....	1.9	0.9	5.5	2.0
331031	Stainless steel.....	do.....	0.6	0.8		
	Copper and copper-base alloy:					
335728	Bare wire (for electrical conduction only).....	Million lbs.....	(D)	(D)	-	-
335790	Insulated wire and cable.....	Million lbs. (copper content).	(D)	(D)		
335102	Rod, bar, and mechanical wire including extruded and/or drawn shapes.....	Million lbs.....	0.5	0.4	(D)	(D)
335123	Plate, sheet, and strip (including military cups and discs... etc.....	do.....			-	-
335127	Pipe and tube.....	do.....			-	-
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	do.....				
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....	do.....	3.2	2.1	(NA)	0.1
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, and welded tubing, etc.).....	do.....				
	Castings (rough and semifinished): <sup>1</sup>					
332011	Iron (gray and malleable).....	1,000 short tons..			1.6	0.8
332300	Steel.....		(NA)	6.8	(D)	(D)
336100	Aluminum and aluminum-base alloy.....	Million lbs.....			0.6	0.3
	Forgings: <sup>1</sup>					
339100	Iron and steel.....	1,000 short tons..	(D)	(D)	1.8	1.9
339200	Aluminum and aluminum-base alloy.....	Million lbs.....	(D)	(D)	(D)	(D)
	Bearings: <sup>1</sup>					
356218	Ball.....		(X)	1.0	(X)	(D)
356201	Roller.....		(X)	0.2	(X)	(D)
970099	All other materials and components, parts, containers, and sup- plies consumed.....		(X)	<sup>2</sup> 82.3	(X)	<sup>2</sup> 26.1
976000	Materials, parts, and supplies, n.s.k. <sup>3</sup> .....		(X)	45.8	(X)	4.3

(D) Withheld to avoid disclosing figures for individual companies. In some cases figures which are otherwise publishable are withheld to avoid indirect disclosure by subtraction from higher-level totals or from related figures. (NA) Not available. n.s.k. Not specified by kind.  
(X) Not applicable.

<sup>1</sup>No data are available for castings and forgings produced and consumed in the same establishment.

<sup>2</sup>Includes all material for which a symbol (D) appears.

<sup>3</sup>This item represents the total cost of materials for establishments that did not report detailed materials data. For 1967 this includes estimates for companies that were not mailed report forms.

## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

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In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industry 1951, these small establishments accounted for approximately 1 percent of payrolls and 1 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

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More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

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# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

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**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.

**Shipments of Individual Products**--In the 1967 census program, more detailed shipment information was collected on the output of approximately 10,000 individual products. These products are identified by a 7-digit code and are grouped into approximately 1,200 classes of products which in turn are primary to about 430 4-digit industries. Data at the 5-digit product class level have been collected each year as part of the annual survey of manufactures. Information at the 7-digit level is collected in the quinquennial census of manufactures program and, for many industries, in the Current Industrial Reports program of the Bureau.

Typically, both quantity and value of shipments information were collected. However, if there was no meaningful physical quantity measure that could be reported by manufacturers, only value of shipments was collected. Insofar as additional other measures were collected for selected products, they are shown in table 3.

**Value Added by Manufacture**--This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

"Value added" avoids the duplication in the value of shipments figure which results from

the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

**Expenditures for Plant and Equipment**--For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments, and (b) new machinery and equipment used for replacement purposes and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

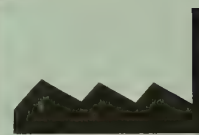
These totals exclude that portion of expenditures for new facilities and equipment leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expense are also omitted.

**End-of-Year Inventories**--Respondents were asked to report their inventories at approximate current costs if feasible; otherwise, at book values. Since different methods of inventory valuation are used (LIFO, FIFO, etc.), the definition of the value of the inventories aggregated for all establishments in an industry is not precise. The figures on change in inventory between years are of considerably greater significance than the measurement of the level of inventories.





# 1967 CENSUS OF MANUFACTURES



## INDUSTRY SERIES

## preliminary report

### Small arms ammunition

SIC Code 1961

The Small Arms Ammunition Industry includes establishments primarily engaged in manufacturing ammunition for small arms having a bore of 30mm. (or 1.18 inch) and below. Establishments primarily engaged in manufacturing ammunition except for small arms are classified in group 192, blasting and detonating caps and safety fuses in industry 2892, and fireworks in industry 2899.

The classification of establishments for which data are tabulated in this report is based upon the definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classi-

fied in the Small Arms Ammunition Industry amounted to \$583.8 million, an increase of 203 percent compared with 1963. Value added by manufacture at \$279.4 million in 1967 was 169 percent more than value added in 1963. Average employment in the industry showed an increase of 175 percent from 1963 to a total of 24.5 thousand employees in 1967.

Total value of shipments and other receipts of establishments classified as small arms ammunition was \$583.8 million. The industry shipments of primary products represented between 85 and 99 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was also between 85 and 99 percent in 1963.

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories	Specialization ratio	Coverage ratio
	Total	With 20 employees or more	Number	Payroll	Number	Man-hours	Wages							
(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(percent)	(percent)	
INDUSTRY 1961.--SMALL ARMS AMMUNITION														
1967 Census....	42	15	24.5	169.2	19.1	37.9	120.8	279.4	315.5	583.8	12.4	151.3	85-99	95
1966 ASM <sup>1</sup> .....	(NA)	(NA)	19.1	142.3	16.6	34.6	113.1	232.1	247.4	467.9	8.2	115.0	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	10.5	65.6	8.6	16.9	49.7	125.6	111.6	236.6	4.8	77.8	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	9.3	58.3	7.6	15.6	44.2	118.7	93.9	208.9	5.5	71.8	(NA)	(NA)
1963 Census.....	31	13	8.9	51.9	7.1	14.1	38.1	103.8	85.7	192.5	5.5	63.5	85-99	92
1962 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1958 Census <sup>2</sup> ....	24	12	9.0	44.2	5.7	11.3	26.0	82.7	75.7	167.4	4.2	130.2		94

Note: Includes data only for privately owned and/or operated establishments. Government owned and operated establishments are excluded.

(NA) Not available.

<sup>1</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>2</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

Issued October 1969

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary  
Rocco C. Siciliano, Under Secretary  
BUREAU OF THE CENSUS George Hay Brown, Director

The total value of small arms ammunition shipped by all producers in 1967 was \$562.1 million of which \$554.2 million, or 95 percent, were shipped by plants classified in industry 1961, Small Arms Ammunition, while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 92 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

## TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(Geographic data for this industry will not be published separately.)

TABLE 3. Value of Shipments by All Producers: 1967 and 1963

(Includes value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Value (million dollars)	
		1967	1963
1961- --	SMALL ARMS AMMUNITION, 30 MM. AND UNDER, TOTAL <sup>1</sup> .....	562.1	192.4
19610 12	Shipped under U.S. military contract.....	418.6	82.1
	Shipments other than U.S. military contracts:		
	For small firearms (rifles, shotguns, and sidearms):		
	Cartridges:		
19610 83	Rim fire.....	56.5	41.5
19610 85	Center fire.....		
19610 87	Shotgun shells.....	71.7	49.7
19610 89	All other, including for machine gun, air rifle, B-B gun, etc.....	12.5	14.6
19610 00	Small arms ammunition, n.s.k. (Represents establishments with 10 employees or more in 1967. See Note.).....	1.8	4.4
19610 00	Small arms ammunition, n.s.k. (Represents establishments with fewer than 10 employees in 1967. See Note.).....	1.0	

Note: In the 1967 Census of Manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending with "002" and is further discussed in the text. Such establishments were usually mailed a "short form" in the 1963 Census of Manufactures. These short forms typically provided for coding products to the product class level (5 digits) followed by "00" rather than only to the 4-digit level followed by "000." Therefore, the 1963 "n.s.k." (000) figure is not strictly comparable to the total of the two "n.s.k." (000 and 002) figures in 1967.

In addition to the 1967 "n.s.k." (code 002) resulting from the above, in both the 1967 and 1963 Censuses of Manufactures, products which were not completely identified on the standard forms were coded to the appropriate product class code (5 digits) followed by "00," or in some cases to the appropriate product group code (4 digits) followed by "000."

<sup>1</sup>Includes data only for privately-owned and/or operated establishments. Government-owned and operated establishments are excluded.



TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 1961.--SMALL ARMS AMMUNITION					
	Materials, parts, containers and supplies, total.....		(X)	273.3	(X)	79.7
	Mill shapes and forms (except castings):					
	Carbon steel:					
331017	Wire and wire products.....	1000 short tons..	155.9	85.5	4.1	2.4
331012	Sheet and strip.....	do.				
331013	Plates.....	do.				
331011	Bar and bar shapes.....	do.				
331019	All other carbon steel mill shapes and forms.....	do.				
	Alloy steel (except stainless):					
331021	Bar and bar shapes.....	do.	203.2	110.7	(D)	(D)
331029	All other alloy steel mill shapes and forms.....	do.				
331031	Stainless steel.....	do.				
	Copper and copper-base alloy:					
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes.....	Million lbs.....	203.2	110.7	(D)	(D)
335123	Plate, sheet, and strip, including military cups and discs...	do.			(D)	(D)
335127	Pipe and tube.....	do.			-	-
	Aluminum and aluminum base alloy:					
335202	Sheet, plate, and foil.....		(D)	(D)	(NA)	(NA)
335205	Extruded shapes, including extruded rod, bar, pipe, tube, etc.....		(D)	(D)	(NA)	(NA)
335209	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, and welded tubing, etc.....)		(D)	(D)	(NA)	(NA)
	Bearings:					
356218	Ball.....		(D)	(D)	(D)	(D)
356228	Roller.....		(D)	(D)	(D)	(D)
970099	All other materials and components, parts, container, and supplies consumed.....		(X)	172.2	(X)	176.0
976000	Materials, parts, containers and supplies, n.s.k. <sup>2</sup> .....		(X)	4.9	(X)	1.3

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# 1967 CENSUS OF MANUFACTURES



MC67(F)-19A-7

## INDUSTRY SERIES

**preliminary  
report**

### Guns, howitzers, mortars and related equipment and Ordnance and accessories, n.e.c. SIC Codes 1911 and 1999

The Guns, Howitzers, Mortars, and Related Equipment Industry includes establishments primarily engaged in manufacturing naval, aircraft, antiaircraft, tank, coast, and field artillery having a bore over 30 mm. (or over 1.18 inch), and components. Establishments primarily engaged in manufacturing small arms and parts 30 mm. (or 1.18 inch) and below are classified in industry 1951.

The Ordnance and Accessories, Not Elsewhere Classified Industry includes establishments primarily engaged in manufacturing ordnance and accessories, not elsewhere classified.

The classification of establishments for which data are tabulated in this report is based upon the

definitions contained in the 1967 edition of the Standard Industrial Classification (SIC) Manual.

In 1967, the value of products shipped and miscellaneous receipts of establishments classified in the Guns, Howitzers, and Mortars and Ordnance and Accessories, N.E.C., Industry amounted to \$767.0 million, an increase of 119 percent compared with 1963. Value added by manufacture at \$408.7 million in 1967 was 74 percent more than value added in 1963. Average employment in the industry showed an increase of 58 percent from 1963 to a total of 39.5 thousand employees in 1967.

Of the \$767.0 million total value of shipments and other receipts of establishments classi-

TABLE 1. General Statistics: 1958 to 1967

(See appendix, "Explanation of Terms")

Year	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)	Specialization ratio (percent)	Coverage ratio (percent)
	Total	With 20 employees or more (number)	Number	Payroll (million dollars)	Number	Man-hours (millions)	Wages (million dollars)							
	(number)	(number)	(1,000)	(million dollars)	(1,000)	(millions)	(million dollars)							
INDUSTRY 1911 AND 1999.--GUNS, HOWITZERS, AND MORTARS, AND ORDNANCE AND ACCESSORIES, N.E.C. <sup>3</sup>														
1967 Census....	105	68	39.5	297.9	24.9	50.3	158.0	408.7	318.5	767.0	20.3	104.4	91	88
1966 ASM <sup>1</sup> ..	(NA)	(NA)	40.5	306.4	23.9	48.8	155.9	407.3	225.2	609.1	33.6	87.2	(NA)	(NA)
1965 ASM <sup>1</sup> .....	(NA)	(NA)	37.0	274.4	22.1	45.0	144.6	354.8	165.8	526.7	27.9	54.1	(NA)	(NA)
1964 ASM <sup>1</sup> .....	(NA)	(NA)	26.3	190.4	15.4	29.8	96.4	252.5	118.1	355.5	23.5	55.3	(NA)	(NA)
1963 Census....	60	37	25.0	176.2	15.1	30.7	93.7	235.2	115.4	351.0	12.3	43.3	78	69
1962 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1961 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1960 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1959 ASM <sup>1</sup> .....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1958 Census <sup>2</sup> ....	51	26	15.5	94.8	10.2	21.3	56.4	158.5	39.3	199.7	10.8	(NA)	(NA)	(NA)

(NA) Not available. n.e.c. Not elsewhere classified. <sup>1</sup>Revised.

<sup>2</sup>Based on a representative sample of establishments canvassed in the annual survey of manufactures (ASM). These estimates may differ from the results of a complete canvass of all manufacturing establishments. The percentage standard errors of the 1966/1965 relatives for employment and value added were 1 and 1, respectively.

<sup>3</sup>Data prior to 1958 appear in Volume II, 1963 Census of Manufactures, in table 1 of the chapter devoted to this industry.

<sup>4</sup>Includes data only for privately-owned and/or operated establishments. Government owned and operated establishments are excluded.

Issued January 1970

For sale by the Bureau of the Census, Wash., D.C., 20233 or any U.S. Department of Commerce field office. 10 cents

**U.S. DEPARTMENT OF COMMERCE Maurice H. Stans, Secretary**

**Rocco C. Siciliano, Under Secretary**

**Harold C. Passer, Assistant Secretary for Economic Affairs**

**BUREAU OF THE CENSUS George Hay Brown, Director**



fied as Guns, Howitzers, and Mortars and Ordnance and Accessories, N.E.C., \$64.7 million were products primary to other industries; and \$39.9 million were receipts for miscellaneous activities. The industry shipments of primary products represented 91 percent of the total manufactured product shipments, primary and secondary. This percent, called the specialization ratio for the industry, was 78 percent in 1963.

The total value of Guns, Howitzers, and Mortars and Ordnance and Accessories, N.E.C., shipped by all producers in 1967 was \$751.7

million of which \$662.4 million, or 88 percent, were shipped by plants classified in industry 1911, 1999, Guns, Howitzers, and Mortars and Ordnance and Accessories, N.E.C., while the remainder was shipped by plants classified in other industries. This percent, called the coverage ratio, was 69 percent in 1963.

These ratios were developed to measure the extent to which the industry statistics in tables 1, 2, and 4 may be compared with the product statistics in table 3.

For an explanation of the terms used in the tables, see appendix at the end of this report.

TABLE 2. General Statistics, by Geographic Areas: 1967 and 1963

(Geographic data for this industry will not be published separately)

## 1967 CENSUS OF MANUFACTURES

TABLE 3. Quantity and Value of Shipments by All Producers: 1967 and 1963

(Includes quantity and value of the products reported not only by establishments classified in this industry, but also by establishments classified in other industries, and shipping these products as "secondary" products. See appendix under "Value of shipments")

Product code	Product	Total shipments including interplant transfers			
		1967		1963	
		Quantity (million units)	Value (million dollars)	Quantity (million units)	Value (million dollars)
1911- --	GUNS, HOWITZERS, AND MORTARS, AND RELATED EQUIPMENT, OVER 30 MM. (OR OVER 1.18 INCHES).....	(X)	64.1	(X)	12.4
1999- --	ORDNANCE AND ACCESSORIES, N.E.C.....	(X)	<sup>1</sup> 687.0	(X)	243.5

n.e.c. Not elsewhere classified. (X) Not applicable.

<sup>1</sup>The 1966 Annual Survey of Manufactures Value of Shipments for product class 19990 is revised to \$519.2 million.

TABLE 4. Materials Consumed, by Kind: 1967 and 1963

(See appendix, "Explanation of Terms")

Code	Material	Unit of measure	1967		1963	
			Quantity (million units)	Delivered cost (million dollars)	Quantity (million units)	Delivered cost (million dollars)
	INDUSTRY 1911 AND 1999.--GUNS, HOWITZERS, AND MORTARS, AND ORD- NANCE AND ACCESSORIES, N.E.C.					
	Materials, parts, containers and supplies, total.....		(X)	260.3	(X)	103.0
	Mill shapes and forms (except castings):					
	Carbon steel:					
331011	Bars and bar shapes.....	1,000 short tons.	24.0	5.6	2.6	0.5
331012	Sheet and strip.....	..do.	24.6	4.2	16.3	2.2
331013	Plates.....	..do.				
331015	Structural shapes.....	..do.				
331017	Wire and wire products.....	..do.	47.9	8.8	6.6	1.4
331019	All other carbon steel mill shapes and forms.....	..do.				
	Alloy steel (except stainless):					
331021	Bars and bar shapes.....	..do.	5.9	3.7	1.0	1.3
331029	All other alloy steel mill shapes and forms.....	..do.				
331031	Stainless steel.....	..do.	1.2	1.4		
	Copper and copper-base alloy:					
335728	Bare wire for electrical conduction.....	Million lbs.....	-	-	(D)	(D)
335790	Insulated wire and cable, copper content only.....	Million lbs. (copper content)	(D)	(D)	(D)	(D)
335102	Rod, bar, and mechanical wire including extruded and/or drawn shapes.....	Million lbs.....	0.4	0.3	(D)	(D)
335123	Plate sheet, and strip (including military cups and discs)...	..do.	0.2	0.2	(D)	(D)
	Aluminum and aluminum-base alloy:					
335202	Sheet, plate, and foil.....	..do.	(NA)	4.0	1.3	0.9
335205	Extruded shapes including extruded rod, bar, pipe, tube, etc.	..do.				
335209	All other aluminum mill shapes and forms (wire, rolled rod, bar, powder, welded tubing, etc.).....	..do.	10.7	6.8	1.9	1.1
999811	Iron and steel purchased scrap.....	1,000 short tons.	(D)	(D)	-	-
	Castings (rough and semifinished): <sup>1</sup>					
332011	Iron (gray and malleable).....	..do.	(D)	(D)	(D)	(D)
332300	Steel.....	..do.	3.7	2.7	(D)	(D)
336100	Aluminum and aluminum-base alloy.....	Million lbs.....	8.1	7.3	1.1	0.6
336200	Copper and copper-base alloy.....	..do.	(D)	(D)	(D)	(D)
	Forgings: <sup>1</sup>					
339100	Iron and steel forgings.....	1,000 short tons.	2.2	4.5	0.7	1.2
339200	Aluminum and aluminum-base alloy forgings.....	Million lbs.....	(NA)	0.4	(D)	(D)
	Fractional horsepower electric motor and generators (under 1 hp.): <sup>1</sup>					
362110	Timing motors, synchronous and subsynchronous.....	Millions.....	(D)	(D)	-	-
362115	Other fractional horsepower electric motors and generators excluding timing motors.....	..do.	(D)	(D)	(D)	(D)
	Bearings:					
356218	Ball.....	..do.	(D)	(D)	(X)	(D)
356228	Roller.....	..do.	-	-	(X)	(D)
970099	All other materials and components, parts, containers and sup- plies consumed.....		(X)	160.1	(X)	92.1
976000	Materials, parts, and supplies, n.s.k. <sup>2</sup> .....		(X)	50.3	(X)	1.7

- Represents zero. (D) Included with material code 970099 to avoid disclosing the operations of individual companies. (NA) Not available.  
n.e.c. Not elsewhere classified. (X) Not applicable.

<sup>1</sup>No data are available on the quantities of castings, forgings, or fractional horsepower electric motors and generators produced and consumed in the same establishment.

<sup>2</sup>n.s.k. Not specified by kind.



## SCOPE AND COVERAGE

This report is one of a series presenting preliminary information on industries and products from the 1967 Census of Manufactures. The data will be superseded in a final report which in turn will be included in *Volume II, Industry Statistics, 1967 Census of Manufactures*. That report will include a comprehensive discussion of the concepts and definitions used in the census.

The census of manufactures covers each manufacturing establishment in the United States with one or more paid employees; manufacturing establishments with no employees are excluded from this census. Firms which operate more than one establishment were required to file a separate report for each location. Companies which engaged in distinctly different lines of activity at one location were asked to submit separate reports if the company records permitted such a separation and the activities were of significant size.

This report does not include figures for administrative offices, warehouses, garages, or other auxiliary units which service manufacturing establishments.

In the 1967 census, for the first time, the approximately 120,000 manufacturing firms with less than 10 employees were excused from filing reports. Under special arrangements which safeguarded the confidentiality of both tax and census records, limited data on payrolls, sales, and industry classification from the administrative records of the Social Security Administration and the Internal Revenue Service were made available to the Census Bureau for use in the 1967 censuses of business, manufactures, and mineral industries. Estimates for data other than payrolls and sales for these small establishments were constructed from industry averages. The effect on industry aggregates is slight in most industries. For manufacturing as a whole, they account for less than 3 percent of the payrolls and value added. In industries, 1911 and 1999, these small establishments accounted for approximately 0.2 percent of payrolls and 0.3 percent of value added by manufacture. Detailed product and materials data for these small establishments were not estimated. The entire estimated value of shipments and cost of materials was imputed to a "not specified by kind" category and is shown in tables 3 and 4.

As in earlier censuses, a number of small establishments may have been misclassified as to industry. However, such possible misclassifications have no significant effect on the statistics other than the number of establishments. As indicated above, report forms were not mailed to very small establishments (less than 10 employees). The industry classifications for

these establishments were assigned on the basis of brief descriptions of the general activity of the establishment. Where the description is incomplete or there are relatively fine lines of demarcation between industries or between manufacturing and nonmanufacturing activity, the code assigned to an establishment could differ from that which would have been assigned on the basis of more complete product information. Therefore, the total establishment count should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 or more employees are far more reliable than the total number of establishments.

The general statistics (employment, payrolls, cost of materials, value added by manufacture, value of shipments) appearing in tables 1, 2, and 4 are reported for each establishment as a whole. Thus, these data reflect not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities as well. This fact should be taken into consideration when comparing the data in tables 1, 2, and 4 with the value of products appearing in table 3. The data in table 3 provide information on the value of the primary products of the industry shipped by all manufacturing establishments whether they are classified in the industry or are classified in other industries and producing the products as secondary products.

More detailed figures for this industry will appear in the final census reports. Final reports will also include a comprehensive discussion of such concepts as "industry," "establishments," and "secondary production," as well as the various statistical items such as "employment," and "value added." Similar preliminary and final reports will be issued for other industries during the coming months. Series of preliminary summary reports showing U.S. totals for each manufacturing industry and for each State are being issued. Final industry reports and final area reports will be published during the first half of 1970. Order forms showing these reports and their prices may be obtained from any U.S. Department of Commerce field office or from the Bureau of the Census, Washington, D.C., 20233.

The 1967 Census of Manufactures is the 28th census of manufacturing establishments in the United States. For 1967, it was conducted jointly with the censuses of mineral industries, retail trade, wholesale trade, and selected services under authority of Title 13 of the United States Code. Title 13 specifies that a census of manufactures be conducted every 5 years and, as recently amended, to cover years ending in "2" and "7." Title 13 also authorizes an annual sample survey of manufacturing establishments in interim years.



# Appendix

## EXPLANATION OF TERMS

*(For a more complete discussion of these terms and the method of compiling the Census of Manufactures, see the "Introduction" to the 1963 Census of Manufactures, Volume II.)*

**All Employees--**All full-time and part-time employees on the payrolls of operating manufacturing establishments for any part of the pay period ended nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for mid-month payroll periods of March, May, August, and November.

**Payrolls--**This item includes all forms of compensation such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation; it excludes payments to the proprietor or partners, if an unincorporated concern. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

**Production and Related Worker Man-Hours--**This total relates to production worker man-hours worked or paid for at the plant including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

**Cost of Materials--**The term "cost of materials" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed regardless of whether these items were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or the generation of electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

**Specific Materials Consumed--**In addition to the total cost of materials which every establishment was required to report, information was also collected on the consumption of major materials used in manufacturing. These materials inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information regarding the specific materials consumed is shown in table 4.

Establishments consuming less than a specified amount (usually \$5,000) were not requested to report consumption of the material separately. Also, the cost of materials for the small establishments for which administrative records were used were imputed as "not specified by kind." (See text for importance of administrative records in the industry.)

**Value of Shipments--**The amounts under value of shipments are the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sales of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by others was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., include not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead) and profit.



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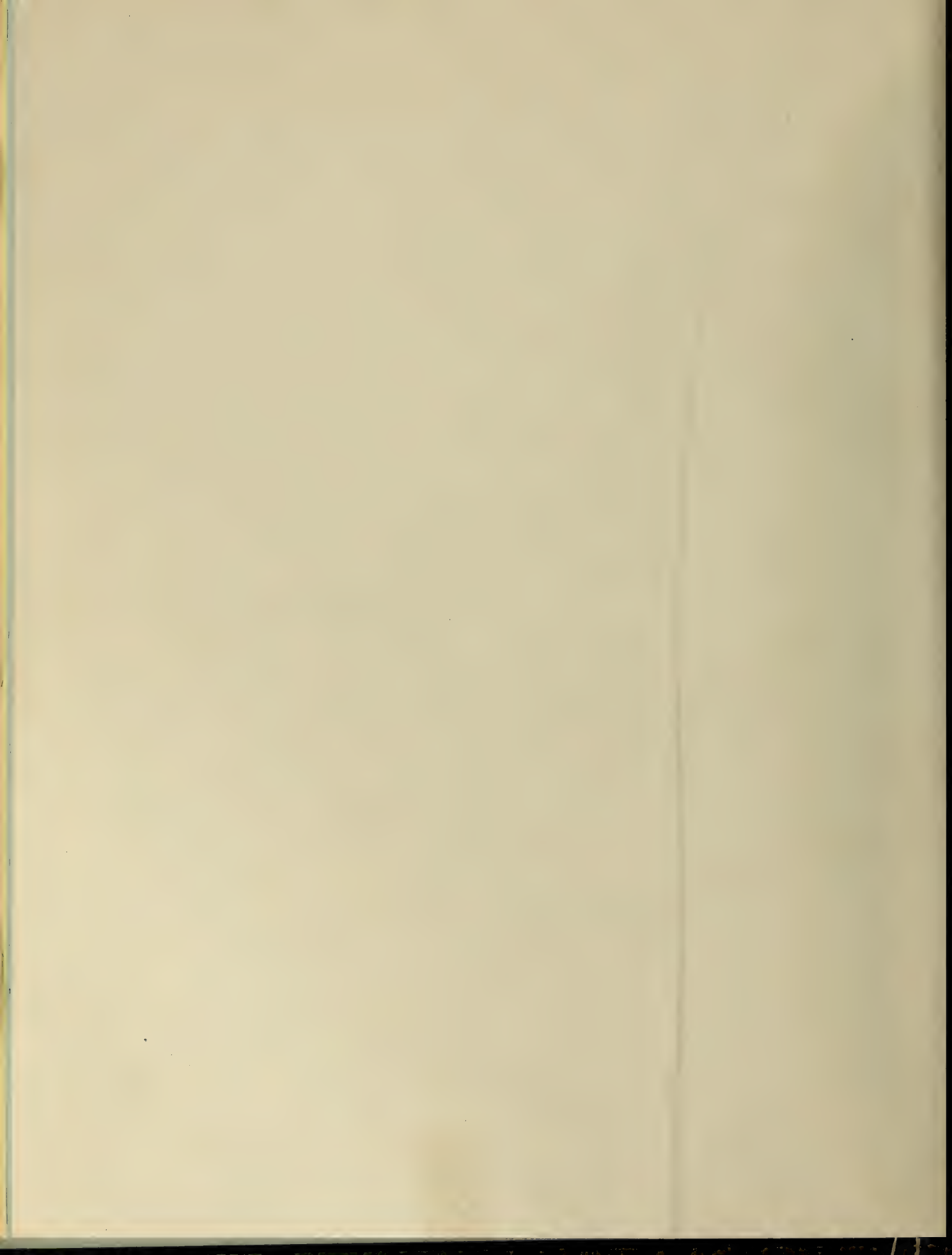
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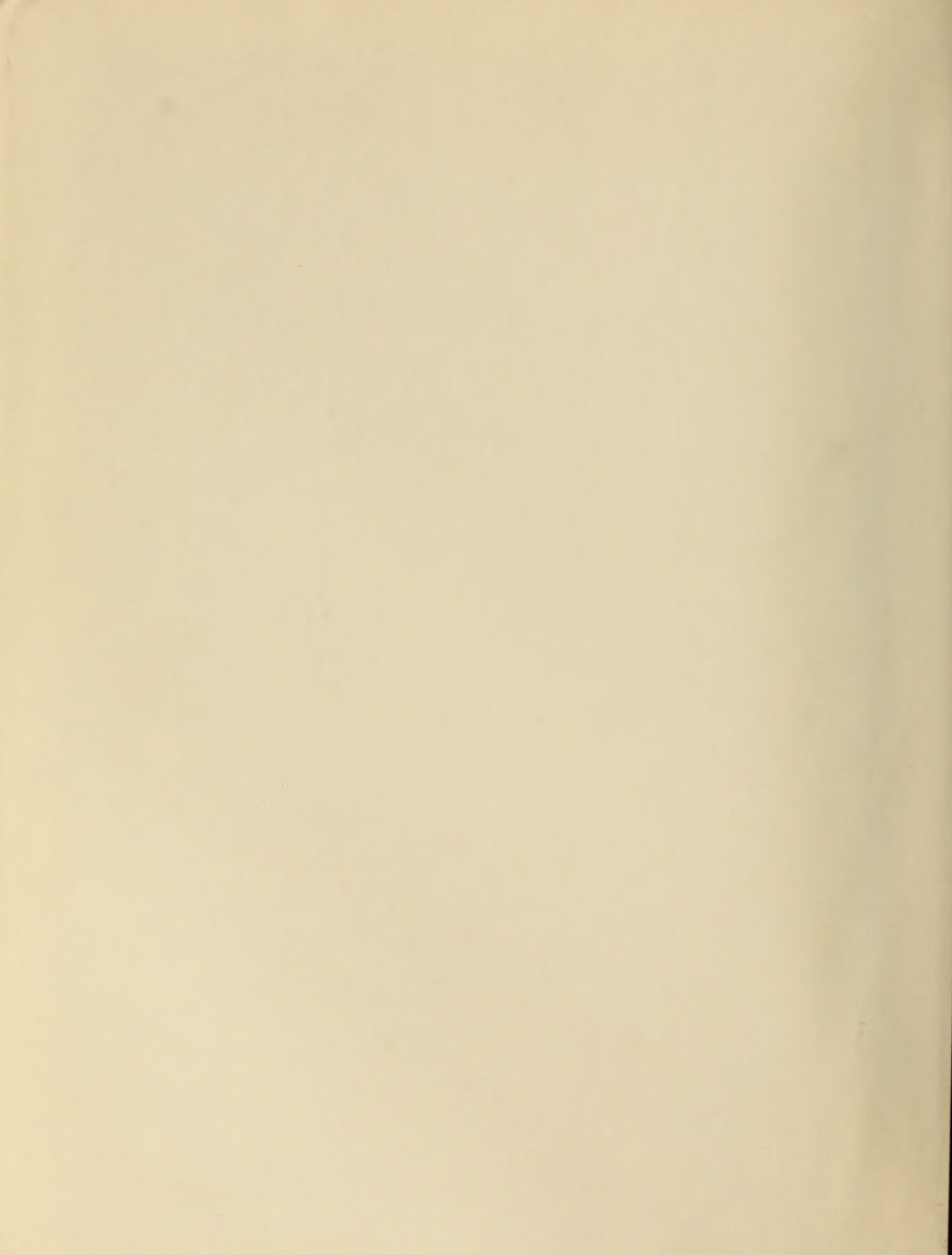








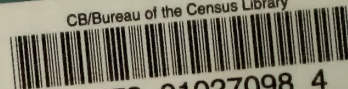








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